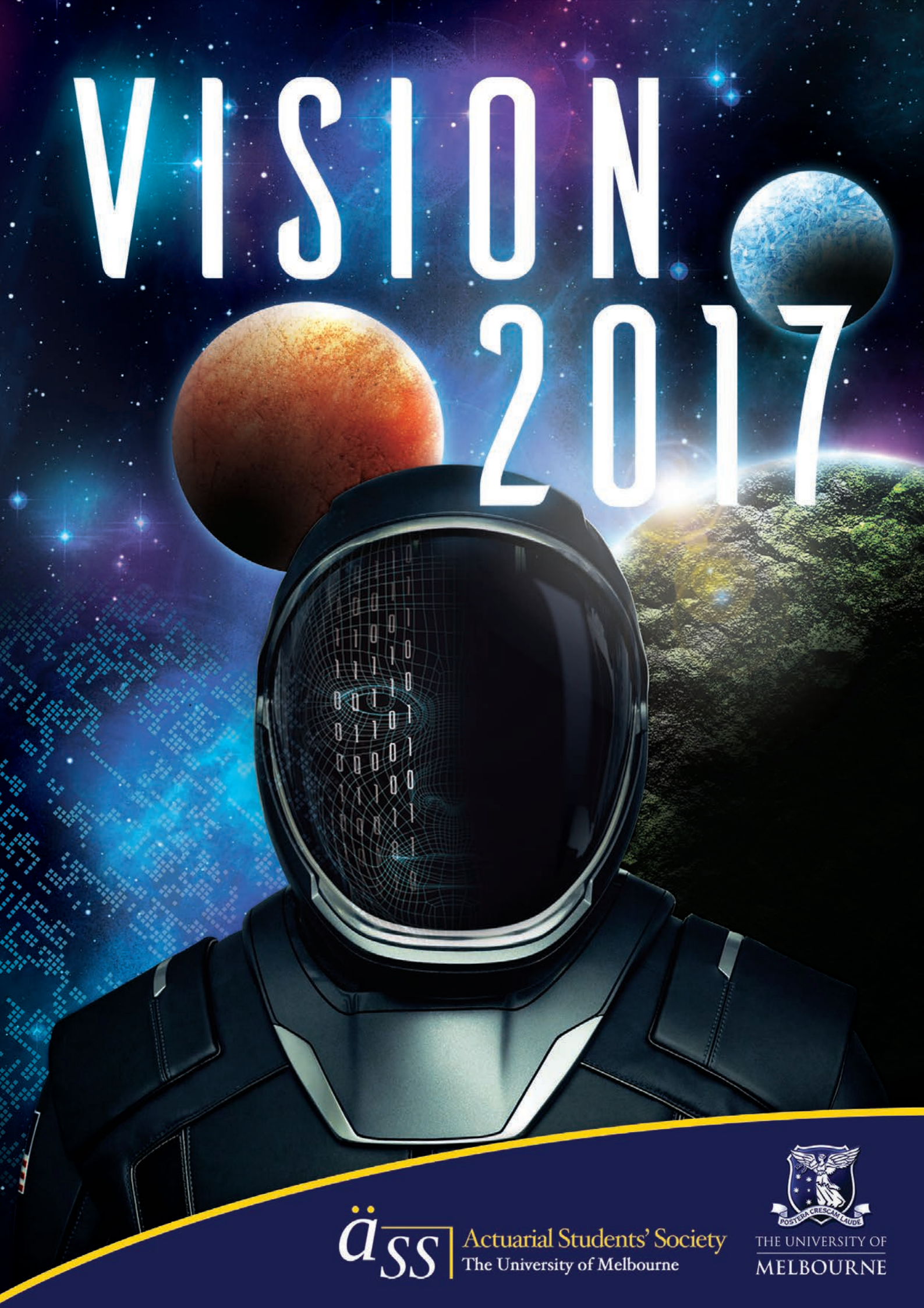


VISION 2017



äSS | Actuarial Students' Society
The University of Melbourne



THE UNIVERSITY OF
MELBOURNE

The University of Melbourne
Actuarial Students' Society

VISION

2017

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Note From the Designer

This year's *Vision* cover design represents the future of humanity in space and the progression of artificial intelligence and technology.

Your future is determined by your actions so reach out and grasp the *Vision* that you see.

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Editor's Address

Welcome to the 2017 edition of *Vision*!

Over the years, *Vision* has snowballed into more than just the careers booklet that it was in its first iteration. In line with the Actuarial Students' Society's purpose of bridging the gap between students and professionals, you will find a vast array of information from sponsors, as well as articles about committee events throughout the year, student experiences and even some miscellaneous articles about anything!

As you read through this magazine, hopefully you will learn something new: for current members – advice from other members, as well as information from potential employers, and for sponsors – a glimpse into the mind of an actuarial student and a better understanding of the actuarial student cohort at the University of Melbourne.

I would like to give a big thank you to our sponsors – without you we would not be able to do what we do!

To those who are in their final year of study, hopefully you will look back fondly on your years studying at the University of Melbourne, with the Actuarial Students' Society helping to foster some of those great memories – for those intending to pursue the FIAA qualification, the journey has only just begun! To those continuing their education next year, I congratulate you on making it as far as you have. Persevere and hopefully you can achieve what you set out to achieve at the start of your degree!

To the committee of 2017, it's been a very rough ride, but we got there in the end! A big thank you to those who have gone above and beyond to get things done throughout the year, from event execution to general ad hoc tasks throughout the year. However, there are no apologies for all the writing that I have forced you to slog through! I wish the 2018 committee all the best in the coming year.

I will close with my favourite actuarial joke: what is the difference between a normal actuary and a mafia actuary? A normal actuary can tell you the probability that each person in your portfolio dies, while the mafia actuary can tell you who.

David Kwak
Education Officer

President's Address

In my years representing the Actuarial Students' Society, I have proffered advice, provided guidance, and introduced the organisation on innumerable occasions. Yet, three years and hundreds of conversations later, I find myself answering questions with less conviction than the relatively ignorant 18-year-old version of myself. The difference? I now understand the full extent of pathways actuarial students can choose to follow. Anecdotally, the broad array of potential pathways available to actuarial graduates is evident in the 2017 ASS outgoing committee. Amongst us, we have graduating students beginning exciting careers in actuarial consulting, data analytics, banking, trading and several other professional fields. As our members begin to observe the changing landscape before us, we adapt, gaining interest in what lies outside the roles predetermined for actuarial graduates. This changing demographic, whilst exciting, poses a unique challenge to the Actuarial Students' Society.

The 2017 committee's initial evaluation of our key aims yielded the same 3 key pillars which have underpinned the operation of our society in the past: to facilitate professional development, foster a strong sense of community amongst fellow students and build meaningful professional connections. The challenge we faced this year was staying true to our core values whilst accounting for the ever-changing demographic of our member base.

Our year began with an influx of enthusiastic new actuarial students; a cohort larger than ever before. During semester one, we focused heavily on professional development, hoping to provide context and background to the industries towards which our members were looking. We began by conducting our keystone First Year Information Session, which was expectedly well-received. Building on the success of last year's inaugural panel-style event, we held 2 educational events in a similarly interactive manner; the first being our Silver Sponsor Careers Q&A, and the second being our Internship Information Session. This year's Internship Information Session panel included speakers with backgrounds in management consulting, investment banking, and credit risk analytics alongside the traditional actuarial advisory roles. The interactive nature of the Q&A-structured events proved to engage attendees more directly, whilst simultaneously providing more relevant insights by allowing students to ask their own questions.

In our second semester, we collaborated with our new sponsor, Optiver, to hold a maths challenge intended to explore a different application of our mathematical skills. We also held our ASS Excel Workshop, which was internally developed to cover specific techniques with applications for university students across the different year levels. Feedback indicated interest in broader and more advanced techniques, which we hope to take on board for next year and beyond possibly in the form of a series of Excel workshops.

The concept of networking can be easily overcomplicated. As a society with deep alumni relationships, our most powerful resource is our network. This year, we introduced a Career Mentoring Program which utilised the committee's existing network to build connections between students past and present. In partnership with the Faculty of Business and Economics, we hope to be able to continue this program well into the future, with the continuing aim of fostering long-lasting connections between current and aspiring actuaries. Running concurrently with our Career Mentoring Program were our classic networking events that have formed the core of our event offerings through their continuing success. Trivia Night, Poker Night, Pool Night, and of course Contact Night are the platforms we rely on to facilitate meaningful interactions between our members and sponsors.

One of the fundamental differences between the ASS and other faculty/major specific societies is our size. The ASS is uniquely exclusive by nature, so the importance of forming connections with peers is of paramount importance, both for educational and social reasons. Consequently, the motivation behind our garment launch is to promote this sense of community within our members, which we hope extends beyond the university degree.

Looking past the new and embellishing events and initiatives, we continue to develop our core programs: our ASS Subject Review (now more comprehensive than ever), our International Students Information resources, our pizza lunches and our various information sessions. These simple programs, often overlooked in this time of change, form the identity of our club, and act as a reminder of who we are and what we aim to do.

As the academic year comes to an end, we reflect on our achievements as a committee, but also realise that our existence and all our operations are only made possible by the generosity of our sponsors, old and new. To our sponsors, we wholeheartedly thank you for your continuing support and participation in our events which have undoubtedly helped to enrich the university experience for our members. In return, we hope to continue ensuring that our best and brightest students are always aware of the exciting career opportunities that you can offer.

To our members, thank you for your support and involvement in the ASS. The Actuarial Students' Society is the success that it is because of each of you. To our 2017 committee, I would like to thank you all for your unconditional dedication and passion, and hope that this committee experience has been one that is both fulfilling and rewarding. I look forward to seeing what the new leadership team of 2018 will bring for the ASS, and offer my best wishes and continuing support in the years to come.

Truman Tang
President

2017 Committee



Truman Tang
President



Bob Zhu
Vice President



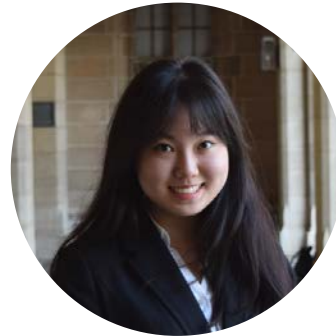
Garvin Tso
Secretary



Rui Jin
Treasurer



David Kwak
Education Officer



Jiani Chen
Sponsorship Director



William Soo
Sponsorship Officer



Callan Jones
Events Director

2017 Committee



Angel Yuan
Media Officer



Tishan Paranehewage
Student Engagement Director



Jack Zhang
Student Engagement Officer



Aarish Alinizar
First Year Representative



Daisy Li
First Year Representative



Phillip Guo
First Year Representative



Max Yang
Sub-committee Officer



Yan Liu
Sub-committee Officer

Who We Are

The Actuarial Students' Society was formed in 1995 with the objective of enhancing the professional and social lives of our members. By forging relationships between employers and students, as well as between students themselves, we endeavour to provide a mix of educational, career-focused and fun experiences. With over three hundred members, the Society caters for all those studying the Actuarial Studies major of the Bachelor of Commerce degree at the University of Melbourne.

Throughout the year the Society provides members with valuable exposure to the industry through our annual Contact Night, 'Student vs. Sponsor' competitions and careers luncheons, in addition to an array of activities that allow them to interact in a social setting. Our members can therefore develop professional skills, learn about career pathways and achieve their long-term goals while having fun with fellow actuaries. Sponsors are given opportunities, not only to interact with some of the brightest minds in their field of study, but to also position themselves at the vanguard of their industry in the minds of our members.

Vision, the annual publication of the Society, has gradually evolved from the 'Vision Career Booklet', to a broader-based publication to reflect the Society's role in fostering not only the professional, but also the social development of its members.



Back row: Phillip Guo, Jack Zhang, Callan Jones, Tishan Paranehewage.
Middle row: Garvin Tso, David Kwak, Truman Tang, Bob Zhu, William Soo.
Front row: Jiani Chen, Angel Yuan, Daisy Li, Rui Jin.
Absent: Aarish Alinizar.

2017 ASS Events Review

Much like students at Hogwarts, as you progress through your actuarial degree, your chances of survival diminish at an ever-increasing rate – the parallels run far deeper than you would expect. Take Professor McGonagall for example, who can transfigure into a tabby-cat at will. Most, if not all, actuarial lecturers can do this, electing to become a snake come exam-writing time. However, all students know that before you can take on the Voldemort of actuarial studies (that is Contingencies) you must first undergo rigorous training and preparation.

With this in mind, the Actuarial Students' Society has made it their goal to organise entertaining events which:

- (1) give students the basic skills and information necessary to complete the actuarial degree;
- (2) inform them on their options and opportunities moving forward; and
- (3) allow them to network and prepare them for life after university.

The ASS prides itself on its quality and diverse range of events. This year saw us revamp a number of our traditional events and add a handful of new ones.

Welcome Back Pizza Lunch

“How did you make it to third year?”

Nothing calms the back-to-school nerves better than 65 pizzas and soft drink down on South Lawn. It has continued to be one of the great perks of an ASS membership, allowing new members to reimburse themselves for membership fees almost instantaneously.

Along with meeting the new first-year students, it was a great opportunity to catch up with all those familiar faces from existing cohorts. It's the ideal way to start the year with a casual event that is fun for everyone. The keen-eyed observers would have noticed Secretary Garvin Tso rocking the aviators as fashionably as always.

It was a great success and an awesome way to start the year.

First Year Information Session

“Really, all ASS events have sushi ... best club ever”

Personally, this is one of my favourite events of the year. There's nothing better than seeing the look on the faces of first years when they see the table of diminishing cohort numbers. It was a brilliant turnout with the whole lecture theatre overflowing with new students keen to get a better understanding of what actuaries do.

Insights ranging from subject selection, potential career pathways and general study tips throughout the degree were vital to the success of this event. I would like to thank our Education Officer David Kwak for all the hard work he put into this excellent presentation.



Trivia Night

"No, the J in Donald J Trump doesn't stand for Joshi"

I was excited to be given the opportunity to host our first major event of the year. Trivia Night has been a tradition with the ASS for many years now. However, 2017 saw a revamp starting with a brand-new venue. Held at the Metropolitan Hotel with almost 100 attendees, it would turn out to be a staggering success.

Split into teams of 8, players fought it out across categories including sports, history, geography and much more. We even saw the introduction of a fun new game in the 'Memory Round' which had contestants answering questions after watching the trailer of the comedy *Dodgeball*.

Finally, sticking with the traditions of every Trivia Night past, we held our famous donut eating competition. However, much like the Principle of No Arbitrage, there's no such thing as a free (donut) lunch. It was not revealed until after 10 first year students "volunteered themselves" that the use of hands was prohibited. Congratulations to our winner William Ho – we look forward to seeing you defend your title in the years to come.



Overall, it was a great night for all with some fabulous prizes on offer. However, in the end it was 'Je' who took the cake.

Internship Information Session

"Yeah, we know Sachi, you got Deloitte"

This was a fantastic learning experience targeted towards our second-year students. The session gave the some high-achieving actuarial students the opportunity to share their wisdom and experiences from internships at a wide range of firms.

I would like to thank Angel Yuan, Jack Zhang, Garvin Tso, Max Yang, Rui Jin, Bob Zhu, Sachintha Kumarapeli, Shanuka Nanayakkara and Yan Liu for their contributions to this event.

Careers Q&A

"Will you give me a job?"

We were lucky enough to have several graduates come and have a chat about life after university. Questions ranged from what it's like to work in their respective fields to how students can best prepare for interviews and assessment centres.

I would like to thank Mercer's Meg Yang, KPMG's Jordan Forrest and Quantum's Alex Karklins for volunteering their time – I know that I and many other students found it very insightful as we prepare to join the workforce in, for many of us, less than a year.

Poker Night

Famous last words: "The probabilities are in my favour"

This is without a doubt one of the most popular events on the ASS calendar, with tickets being sold out within just a few days. Over 80 students and sponsors shut the books and put on their game-face for a night of fun. Once again, the competition was heated with over 20 prizes up for grabs and a shot at first prize – a brand-new iPad.

The evening began with eight tables but quickly the numbers started dwindling. The impatient players either rapidly doubled up their stacks, or headed home early. By about 10pm, we were down to the final two. A few hands later, a careless bluff would eventually lead to Taylor Fry's Eli Barr taking home the grand prize.



Optiver Integration Bee

"It's integral that you come to this event"

This was a new event for us and a fun one to run, being exciting and dynamic for all. With over \$300 worth of prizes generously provided by trading firm Optiver, it saw contestants battling it out over several rounds of integrals of varying difficulties.

We started off with a speed round which had students racing to complete a list of 40, supposedly recognisable, integrals as fast as they could. This was followed by the buzzer round in which competitors were given slightly more complex integrals with the fastest solvers receiving the most points.

Finally, we saw the top four contestants battling it out head-to-head on the whiteboards vying for the chance to win the grand prize. As the actuarial major only covers calculus in first year, this required many competitors to recall their first-year mathematics techniques of substitution, partial fractions and integration by parts. There were often elegant solutions to seemingly complex problems.

Congratulations to Jesse Zhao who walked away with a \$150 Melbourne Central gift voucher. Thanks must go to Education Officer David Kwak for producing all the questions for this event. Finally, I would like to thank Optiver for making the trip down from Sydney to support this event. It was great fun and highly informative for all those who attended.

Honours/Masters Information Session

"The man, the myth, the legend ... Professor Mark Joshi"

Targeted primarily towards those nearing the end of their undergraduate degree, this event looked to inform students about future study options. Students were given the chance to ask questions and find out more about their choices moving forward.

I would like to thank Professor Mark Joshi from the Centre for Actuarial Studies for volunteering to speak to us once again.

Pool Night

This was our first major sponsor event of second semester which saw students hang out with mates and network over games of pool. This evening saw a plethora of snookers, massive flukes and of course a handful of trick-shots. If you're wondering why I didn't win any games, it was to get on the good side of sponsors, as I am vying to get a grad job in the coming months.

We hope that everyone enjoyed this event as much as the committee did, and we look forward to continuing it as a longstanding tradition in the years to come.

"Of course that shot was deliberate"



Excel Workshop

The interactive Excel workshop is a relatively new addition to the ASS events repertoire. With lecturers constantly reminding us about the importance of Microsoft Excel, this has come to be one of the most helpful events on the ASS calendar. Students were given a data set and taught how to complete several tasks ranging from deleting duplicate data entries to sorting and extracting specific data points.

"What is the shortcut for a Mac?"

I would like to thank our Education Officer David Kwak and Treasurer Rui Jin for putting together and running this fantastic event.

Looking Forward

As the semester comes to a close, we have been busy preparing for the most anticipated event on the ASS calendar, Contact Night. This is our flagship event and will have just been completed upon the release of 2017's Vision.

Keep an eye out for our famous banner!!!

I would like to take the opportunity to firstly thank all our members this year whose ongoing attendance and interest has allowed us to run our events so successfully. Secondly to all my fellow ASS committee members who have been dedicated and shared my passion for the exciting events that the club has the offer. Lastly, and most importantly, I would like to thank all our sponsors, without whom our events could not run – it is your ongoing support and interest which ultimately draws such great student attendance to every one of our events.

With the great successes of this year, I look forward to seeing the club grow in the future and continue to run exciting events for members and sponsors alike. I hope that you have enjoyed the year as much as I have and I look forward to seeing everyone in 2018.

Callan Jones
Events Officer

First Year Experience

Suddenly, it's 8:30am and the exam has begun. Wait —how did we get here? Let's rewind a bit.

The verdant scenery was dashed with shades of blue and musk, and it evoked an unfamiliar yet pleasant tingle. Coupled with a ceaseless harmony of chatter, this was the Botany Bay to my First Fleet. Yet instead of a pungent smell of sweat and soil, I was embraced by the aroma of free sausages. Indeed, this was my first day as a university student.

Orientation week was exciting; so many clubs to join, facilities to visit and altogether the vibrant and buzzing atmosphere of uni. And, more than anything, orientation week was a time to meet people and engage with upperclassmen in various activities. Yet for me, and for many other first years, O-Week represented a turning point in our lives — a chance to start anew and a time to explore the next stage of life. And thus, it began.

The transition was quick. Like newborn pigeons, we graduated from high school to the unknown, only to realise that we were once again at the bottom of the food chain. Without being spoon-fed information and being reminded about uni administration, we were forced to quickly realise that we had to do everything ourselves now. Enrolling in classes was easy, but registering for them was reminiscent of some abominable mix between Hunger Games' brawling and the ATAR release day. Class placements disappear swiftly like worms torn between hungry newborns. This was our first fight to be relevant among the thousands.

After the storm, there was a period of calm, where we began to settle into our new schedules. If you were lucky, you'd start the day after the roosters woke up. For me, this period was a battle of quickly acclimatizing to going to uni, studying between classes and mingling with people I'd likely never meet again. At the same time, I'd meet people who are now irreplaceable friends. Lectures were sometimes bland, yet sometimes filled with an intense session of note-taking, then bland again.

Somehow, this ritual of going to uni and coming back made me feel at home. Too at home.

You start to realise that the work required to just keep up is already more than in VCE, and private study is essential to increase your desirability to business firms. We are now surrounded purely by people who want to study and learn, who specialise in their choice of study. But then again, perhaps I am also included in that category. There are no longer doting teachers who are concerned with each student's grades; only our passion and desire to succeed are there to incentivise learning. Only those of us who are driven can soar above the rest.

All this being said, the first-year experience isn't just about bitter struggles and constant war. Club activities and events are excellent ways to meet new people and mingle with fellow hobbyists. I tended towards enjoying ASS events, mahjong and chess clubs, and uni orchestra to pass time. With thousands of other students at uni, we are bound to find someone with similar interests. Did I also mention free sausages?

Where were we... while I was off dreaming about my first-year experience — or rather, first-semester experience—the exam clock didn't wait. In fact, time never waits. If there's one thing uni has taught me, it's either about sunk cost and opportunity cost, or that time is a precious commodity that has to be balanced between study, social enjoyment and sleep. Finding the perfect balance is something I'm not even sure I'll be able to do next year or the year after, but we just need to find a balance that works for us. Soon, I'll be sitting my second semester's exams, thinking about second semester, and reflecting on some existential riddle regarding my studies and career. But until then, I will enjoy my first-year experience to its fullest. You should too, in whatever that may be.

Phillip Guo
First Year Representative

Second Year Experience

After surviving first-year actuarial studies (admittedly there was only one actuarial subject), we stepped into second-year Financial Mathematics I. Seeing ourselves still standing in the markedly reduced cohort was a moment of accomplishment and pride. The decrease in cohort size was not fully a result of the major's difficulty – many found personally more exciting opportunities in science, finance or economics.

Financial Mathematics I was a relatively smooth continuation from Introduction to Actuarial studies. Many concepts were reviewed and extended slightly. However, towards the end of the semester, the content became more challenging. Ultimately, many students grossly underestimated the standard of difficulty of the exam. Following FMI, the cohort size decreased yet again. Financial Mathematics II featured content that was significantly different to previous actuarial subjects. With a greater focus on measuring investment performance, we finally got a chance to create our first Excel model.

Second year has also been about expanding our horizons beyond our studies and improving our “life skills”. On top of more annuity formulae, we developed our resumes, practised our interview skills and applied for every internship. After the endless pages of application forms and multiple rounds of numerical, situational and personality tests, the hardest part of the application still awaited - the video interview. This process involved recording ourselves by webcam answering questions that showed up on the screen, which made for a highly awkward experience.

Many of us also gravitated towards learning other highly pertinent skills that were not covered in coursework. We participated in the Excel workshop run by the ASS, which was a very good introduction to some commonly used functions in Excel. Some of us also practised coding in various languages and LaTeX. Whilst these skills are arguably unnecessary in the Bachelor of Commerce – and in the case of LaTeX, much slower than handwriting – they will certainly set us up for the future.

In the ASS, we have taken up roles with increased responsibilities. This year, we have been responsible for media, student engagement and sponsorship. It's been a challenge to maintain relationships with all stakeholders, but we have done our best to ensure the smooth operation of our club. We have particularly been focused on implementing structures which would ensure smoother transitions between committees and hopefully improve the sustainability of the society.

In addition to the contact hours, study time, 2-hour return trip to university and work shifts, we've had to manage our time more carefully and prioritise our hobbies. Hobbies are an integral part of our lives as they help alleviate stress and provide a source of comfort. Our hobbies include gaming, sports and, music, of which there is an article in the miscellaneous section.

Ultimately, the second-year experience has been challenging but exciting. With only two actuarial subjects, we have only had a small taste of what's to come in third year. We look forward to continuing to grow the ASS next year!

William Soo
Sponsorship Officer

‘Passing’ RIPPIOOOI

I thought I should begin by apologising for the oxymoron in the title, but I realised that the term “life insurance” is also one.

I failed Financial Mathematics I Let’s start there.

More specifically, I failed the exam hurdle requirement, in an exam where marks were scaled by over 30% (not as uncommon as you might think). At one point I truly decided that I was going to give up on actuarial studies, but after a good period of self-reflection and consulting the opinions of different people, I decided to give it another shot. One year onwards I have passed the FM1 exam with a H1, and life is proceeding as planned again. If anything, the experience actually gave me better balance in life. In this article I hope to share with you my experiences, and perhaps inspire those of you who have failed and would like to try again (or not, and you can feel content that you made the right decision).

My first thought on failing an exam was “Is there any chance I did not fail?” I sent a quick email to my lecturer hoping that I could have it reviewed, and he replied nicely with the exact breakdown of my marks, and suggested that I could organise a review session in a few weeks. The faculty’s response was simple – if you failed FM1 you probably can’t handle the rest of the degree. Harsh? Yes, but not unreasonable either.

The next question that came was “What went wrong?” It is now clear to me that I did not manage my time properly. I spent too much time focusing on my employability, networking and involving myself in extra-curricular activities, and I neglected my studies in the process. I did not find the concepts taught in lectures particularly difficult, and my assignment and mid-semester test grades were deceptively high, which ultimately led to my underestimation of the subject’s difficulty. I did not do the tutorial questions, I did not practise, and I tried to cram the entire course in a single day; and then I paid for it.

The exam review session revealed that I incorrectly wrote the retrospective and prospective formulas for calculating bank loans and interest payments, which should have been a rather basic concept. Quite honestly in that moment, if I were the lecturer, I would not have let myself pass. I failed marginally, but it would have been pointless to scrape a pass in a degree where the material will only get harder and harder. I accepted my failure, and decided to do it again properly.

With the acceptance of my failure out of the way, “What now?” was the next question, which was closely followed by, “Is actuarial studies not for me?” To reiterate, I did not find the concepts in FM1 particularly hard, and I later crashed all of the FM2 lectures despite not being enrolled in it; I was able to follow the material so I knew I was capable of completing the degree. That being said it is possible that some of you might decide that actuarial science is not for you, even if you are more than capable of becoming an actuary. In my case I chose my degree knowing that this was what I wanted to do, and the subject content still genuinely interests me. Beyond that I really valued the way actuarial science trains your mind and thinking, which can have a lasting impact on your career even if you don’t end up doing actuarial work at all. When I was in Berlin working on a management consulting project with the university, it was the statistical know-how from my studies which allowed me to scrap very different datasets together to form a database and ultimately create a functional model from it. I would not have been able to do that if it wasn’t for how my mind has been trained to look at numbers in a certain way, and that certainly impressed my client. I now work as a data analyst on a casual basis, and not a single day goes by where I find my training useless.

You might ask then, “Why trouble yourself with the high fail rate in actuarial studies when you can just do a maths and stats degree instead?”

The truth is being an actuary is more than just an occupation; it is a privilege and a responsibility that begins after you fully qualify when you are allowed to start calling yourself an actuary, because merely bearing the title treats you to a certain level of respect in the business world. It is like an exclusive gentlemen's club that is hard to get into, but once you do become a member you are automatically associated with the club's reputation, which you then in part have a responsibility for safeguarding. And so for the above reasons, I have decided that actuarial studies was worth the trouble of continuing.

After all that time spent thinking about an uncertain future, my much-needed luck turned. Quantum was short on staff and needed a casual analyst. I was fortunate to be offered the position after being initially rejected for their internship program. Perhaps I was even more fortunate that I was able to accept the position because I was forced to underload after re-organising my study plan and extending my degree by a year. One year onwards and I am now studying part time, working two days a week, sitting Part 1 exams directly with the Institute, with some time to spare on my hobbies of dancing and cooking.

The biggest takeaway I hope you can get from reading about my experiences is that failing is not the end of the world. It is definitely a time for you to sit down and reconsider what it is you want and what your options are, but it is also something you can bounce back from. You may also decide that actuarial studies is not for you, in which case perhaps you can see your failure in a different light—that it provided you with the opportunity to recognise that.

1. Do employers care about a fail grade on your academic transcript?

Depends. Some companies explicitly screen for it but most don't, instead they look at your WAM and your WAM alone. From my experience a H2B will get you through 90% of GPA screenings, and a H2A will get you through 99% of screenings. Assuming your fail grade is an outlier, a reasonably good WAM should still be realistically achievable.

2. How will my study plan work after I fail a core subject?

You will be unable to enrol in other subjects which include your failed subject as a prerequisite. Actuarial subjects are only taught in one semester each year and are designed to be taken in progression. If at any point you fail one of the hurdles you will have to extend your degree by a year. Of course this will mean you will have extra time on hand and you should use this time productively. Because I failed a subject in second year, I decided to double major in actuarial studies and finance so I can stay productive by completing the finance subjects in my 'third' year. You may also decide to directly sit actuarial exams with the Actuaries Institute. I knew I was never going to do honours or masters so it made sense for me to sit CT6 and 8 with the time I had.

I wish you all the best in your studies, in actuarial studies or not.

Garvin Tso
Secretary

Speak up! A PSA from an Actuarial Tutor

This semester, I have had the privilege of tutoring Financial Mathematics II, a CT1 exemption subject taught at the University of Melbourne. I remember it being one of the hardest subjects of second year. However, having completed the undergraduate degree and more, as I prepare for my tutorials, I think to myself, *“why can’t my current subject’s slides be 50% worked examples like in FM2?”*

Tutoring brings with it a large number of challenges. Having to balance tutorial preparation time with my own study time and other work commitments has probably been the biggest struggle, as I study about martingale pricing and the *no free lunch with vanishing risk principle* (yes that is a thing) from my own subjects while preparing a lesson on duration, convexity and immunisation for my students. Despite this, there is something extremely rewarding about the idea that I am directly contributing to someone’s education, which makes the preparation time all worth it.

The second biggest struggle would probably be the following situation:
“So when does the limit of the value of a perpetuity exist?” I ask.

Silence. As I unscrew the lid of my water bottle, I look at my watch before taking a long drink. A classroom full of students furiously copy everything that I had written on the whiteboard into their workbooks as they avoid my eye contact – there is still no response to my previous question. Finishing my drink, I look back at my watch, mindful that time is ticking by.

What feels like hours passes before a student finally answers, “interest rates must be positive”. I breathe a deep sigh of relief, with the knowledge that my tutorial will finally be able to move on. I now understand how my tutors felt when they were met with silence from our cohort, as we were too fearful that an incorrect answer to their question would lead to irrational judgment from our peers.

Students (*especially* actuarial students) are extremely shy in tutorials, and thus tutorials often go for extended periods of time with no response from students. If you are lucky, you might have those one or two students that answer everything moderately quickly. But, as someone who does not believe in spoon-feeding, a small part of me dies when I have to resort to it to complete the tutorial on time.

There is nothing wrong with giving an incorrect response – I remember when I studied Financial Mathematics II, the lecturer asked how many months were between June and October, and I said two (in my fatigue, I thought **October** was the 8th month). Everyone laughed, but we all moved on. Giving an incorrect answer will help you identify any holes in your knowledge, and prevent you from making the same mistake again – don’t be afraid of being perceived as a failure. After all, as Jake the Dog from Adventure Time once said, *“sucking at something is the first step towards being sorta good at something”*. I can say with 100% certainty that I now know the number of months between June and October (it’s four, right?).

Take charge – you can be the hero that everyone needs (but perhaps not the hero they deserve). You should also be comforted by the fact that you cannot possibly mess up as bad as that poor student who thought there were two months between June and October.

By the way, I lied before – the biggest struggle of being a tutor is having to use a Macintosh computer.

David Kwak
Education Officer

Committee Experience

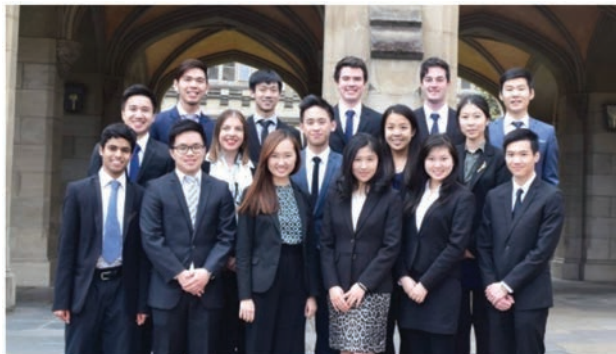
Being part of the Actuarial Students' Society committee for the past three years has been extremely rewarding and challenging. As exciting as committees may seem, there is a lot that happens behind the scenes to make sure all of our events and activities run as smoothly as possible. Reflecting on the experience, my fondest memories are always linked to how well the committee has always gotten along, and how willing everyone is to help organise events and activities.

Rather than just reflect on the entire three years, I thought it might be more interesting to see how things have changed each year. It has been an exceptional learning experience, and I truly have no regrets about what the club has accomplished over these three years.

First Year (First-Year Representative)

My initial role with the Actuarial Students' Society was as the First-Year Representative, and it was definitely where I learnt a lot about the internal workings of our club.

Our primary role was to advertise, promote and sell tickets to all of our upcoming events. Therefore, we were the face of the society, having to uphold the good name and reputation of the club. What I learnt here was that while my role was a lot of fun (interacting with other first year students), it was also a serious role. If not performed well, we could experience poor event turnouts as first years are the primary source of attendees (given a lot of our events are specifically targeted at them).



My fondest memories of this time include working with Truman Tang (Current President) and Garvin Tso (Current Secretary) and selling out first-year tickets within hours of ticket release for our events.

What I realised was that working well together with the other first year representatives was key to ensuring that future generations of the society were well supported, as, if we did not get along, it would be more difficult in the following years to work together in more senior positions.

However, we've also tried to lighten the mood at times, and as a team, we do have fun! Committee bonding events are always a must-attend.



Second Year (Events Activity Officer)

Second year was when my responsibilities stepped up significantly. As the events officer, I played a core part in making sure some of our smaller (but important) events ran smoothly. The executive team still handled the largest events, including Contact Night.

In a way, I was saddened, as my favourite part of the committee had previously been engaging with other students and promoting the society. However, it was definitely a more challenging role for me, compared to the previous year.

Here, I learnt the necessity of taking responsibility for all my actions – ensuring that everything was done on time, with leeway before an event in case of emergency. What I remember most vividly (and maybe least fondly) was when 2016 Trivia Night had a serious emergency (the venue cancelled on us hours before the event). Due to the swift planning of the executive team, the Actuarial Students' Society was able to run the event in the Spot building, successfully salvaging the event from total cancellation.

This is just one example of things which can go wrong with events, and how having a very switched-on team can prevent even the worst of scenarios.



Third Year (Vice President)

Being part of the executive team has been a steep learning curve – all roles require a lot of time, commitment and dedication. At times, I feel I definitely could have offered more of my time and effort, but I always try to make sure the club will be set up for the future.

I want to thank the entire committee for being the backbone of the club – you have really made this year's work easy for the executive team!



Concluding Statements

Each year has been a completely new experience for me, and my roles have changed significantly throughout my journey. Joining the Actuarial Students' Society was the highlight of my time in university because I had the opportunity to work with a team of smart, dedicated and passionate individuals.

For any first years interested in a second year role – joining the Actuarial Students' Society committee is not just following orders and promoting the club. You will have the opportunity to be involved with a lot of planning and socialising! Personally, it was a life-changing decision – I received a lot of informal mentorship under the seniors of my day, and I've learnt a lot about the industry and how university is not just about the marks.

For second years interested in a third year role – please realise that executive positions are up for grabs to any capable, dedicated and skilled individuals who have had experience in planning, administration, marketing and a wide assortment of roles. Being part of the executive team has been a lot of hard work, but through this, all of us have gotten a lot closer. Making long-lasting friends is a key step of the journey.

For any third years staying at university next year for an actuarial Honours year or Masters degree – all doors are wide open for you to join the committee as well.

To everyone else, I wish you all the best, and thank you for your support in the ASS.

Bob Zhu
Vice President

Industry Introductions

Life insurance

Death. It's a thought that most don't like to think about, but it's at the core of the life insurance industry. Life insurance is one of the most traditional actuarial fields, with over 25% of Australian actuaries currently working in the industry.

The idea of any insurance policy is to transfer risk away from yourself. What about the risk of dying? When you die, you are free of any debts you may owe, but someone in your family may become responsible for your debts. The debt may be your mortgage, credit card bills, or car payment. A life insurance policy aims to protect policyholders from the loss of income arising upon death, illness, disability, or injury. It is essentially a contract between the insurer and the insured individual, whereby the insurer is obligated to pay a sum of money (either a lump-sum payment or a series of payments) to designated beneficiaries (commonly families). In exchange, the policyholder regularly pays the life insurer sums of money called premiums.

So where does an actuary fit in? In order for a life insurance company to stay profitable, they need to have an idea of life expectancy (how long individuals may live). There are many variables that factor into ones' life expectancy. So, in a nutshell, actuaries mathematically analyse raw data such as age, weight, habits (smoking, drinking, etc.), current health status, and parental information to advise on a fair premium for the life insurance coverage.

As of 13th July 2016, there are 29 registered life insurers in Australia, with the Australian life insurance industry employing over 28,000 people. Among the 28 registered life insurers are six medium-to-large insurers: AMP, TAL, and the big four banks, some of which operate in the industry through subsidiaries. As one of the largest, most well-established, and most stable industries, life insurance is a good practice for aspiring actuaries to begin their profession.

General Insurance

General insurance, commonly known as non-life insurance, protects us and our valuables from the financial impact of unexpected events. Homes, cars, pets and pretty much any tangible asset can be insured against incidents ranging from theft to natural disasters. General insurance is divided into personal lines (aimed at households) and commercial lines (aimed at large legal entities). Personal line policies include home insurance, motor insurance and travel insurance, whereas commercial line policies cover workers' compensation, product liability, medical malpractice and so on.

Like all other forms of insurance, general insurance involves spreading the cost of unexpected risks among all the people who take out the same insurance policy. The monthly or annual premiums paid by policyholders form a pool of funds which is used as financial support for those who are affected by unexpected events. Different policies have different limits on the amount that policyholders will receive. The aid received may come in the form of cash settlement, but may also involve repair or replacement of lost or damaged assets.

Actuaries that work in general insurance provide their expertise to estimate the optimal price of premiums. They may also assist in valuing liabilities and necessary provisions, modelling the liabilities and assets of insurers to assess future capital needs, and creating new insurance policies for the company. General insurance continues to be the most popular area in which actuaries work, with 24% of Actuaries Institute members practising in general insurance.

Superannuation

Presently an obligatory segment of each Australian employment package, superannuation has turned into a vital part of national savings and retirement income. Almost 20% of Australian actuaries are involved in superannuation-related work. They are responsible for the construction and application of mathematical models. These models are designed to project financial outcomes, to best assist superannuation funds and other employee benefit plans. As such, actuaries in superannuation meet the needs of industry groups, employers, employees and individuals.

The superannuation industry has also experienced significant reform over the past few years. As a result of government policy, we have seen the introduction of compulsory employer contributions, a proposed introduction to cap pre-tax voluntary contributions at \$500k, annual contribution limits, and new tax treatments of transition-to-retirement pension payments. Thus, many actuaries work closely with superannuation fund trustees, providing regular advice and guidance and analysing the impact of proposed changes in government legislation and taxation on superannuation.

The superannuation industry, which is worth approximately \$2.3 trillion as of March 2017 continues to develop rapidly and is projected for strong growth in the future, given the ageing Australian population.

Data Analytics

We have the world at our fingertips. A few taps is all it takes to harness the most powerful search engine in the world. From llamas, to actuaries, to the stock market, there is a plethora of data on every topic. And from there, it only takes a few more taps to explore the infinite depths of the Internet.

With such an abundance of information at our disposal, it takes the brightest minds and the most intuitive algorithms to scrutinise and reorganise the data; we call these people data analysts. Data analysts focus on making data-based decisions and delve less into risk and financial outcomes. As such, they go beyond just the traditional 'actuarial' focus.

However, data analytics actually aligns well with the actuarial skillset. Actuaries are experts in analysing information and are highly valued in the data analytics industry for their expertise and insight. Needless to say, the use of data analytics in traditional actuarial fields such as insurance will only be a matter of time.

More than anything, data analytics represents an opportunity for actuaries. The future holds limitless possibilities. Yet, one thing is clear – along with the thriving nature of information networking and data, the skills that data analysts possess are becoming more and more sought after in the industry. Data analytics is definitely a path to be considered for actuaries: you might not trust me, but the data doesn't lie.

Banking and Finance

Due to recent financial events such as the Global Financial Crisis (GFC), actuaries have found their skillsets to be increasingly applicable to other areas of finance outside their traditional areas of practice. These include banking and capital markets (pricing risk and valuations), as well as credit and treasury risks.

Before the GFC, many derivatives were priced based on home loans, and these home loan derivatives were in turn priced into collective financial instruments. Therefore, as soon as home loans defaulted, all securities that were priced based on home loans began to crumble as well, cascading from the sub-prime mortgage market into the derivative securities market.

Due to the impact of the GFC, where the sub-prime mortgage market in America was found to be in terrible condition, the world sought individuals who could spot similar sorts of risk in the banking sector. The actuarial profession was a primary choice, given actuaries' experience in pricing long-term life-related risks. Thus, the non-traditional role of credit risk modelling became a hot topic for actuaries – swapping the word “death” with “default” and “life” with “credit” is a general way of thinking about how actuaries adapted to this industry.

Simply put, the role of an actuary in the banking and capital markets mainly revolves around derivatives pricing and valuation.

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University of Melbourne*

Willis Towers Watson

**No submission*

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Why not start at the top?

Actuaries have the skills to find pure, honest insights hidden in business data. Insights that enables business decision-making, that can change businesses, industries and even countries.

Have you ever considered becoming an Actuary?



Being an actuary isn't just a job, It's a profession.

It's a career where you can use your talents to solve real world problems.

It's a commitment to uphold certain standards of performance, professionalism and ethics.

It's a qualification you can take anywhere in the world.

You'll join a highly regarded profession whose members are in demand and well-rewarded for their analytical and problem solving skills and their ability to lead – and you'll gain the fellowship and support of an elite network of peers throughout Australia and internationally.

Be set up for life, travel the world

Being an actuary is one of the highest paid professions and graduate actuaries are highly employable. There is invaluable credibility in being an Actuary - you'll enjoy great street creds in the business world. Many Actuaries achieve senior executive roles - CEO, Head of Risk, Lead Partner, Chief Actuary are some examples.

Our Australian qualifications are widely recognised and many Australian actuaries work overseas, from Zurich to Mumbai, in developed and developing economies.

The Challenge

Life as an actuary promises a good income, the freedom to travel, the chance to work with smart people and the opportunity to lead. If you can qualify as an Actuary, there is nothing out there you can't achieve if you put your mind to it.

The challenge is intellectual rigour, sheer hard work and persistence.

Qualities you need to succeed

- Communication skills.
- Mathematical skills.
- Complex problem solving.
- Interest in business.
- An eye for detail.
- Focus and dedication.

How to become an actuary

The actuarial education program in Australia is made up of three parts.

Part I can be completed by studying at one of the seven accredited Australian universities, through correspondence with the London Institute of Actuaries or by credit transfer.

Part II is taught by seven accredited Australian universities.

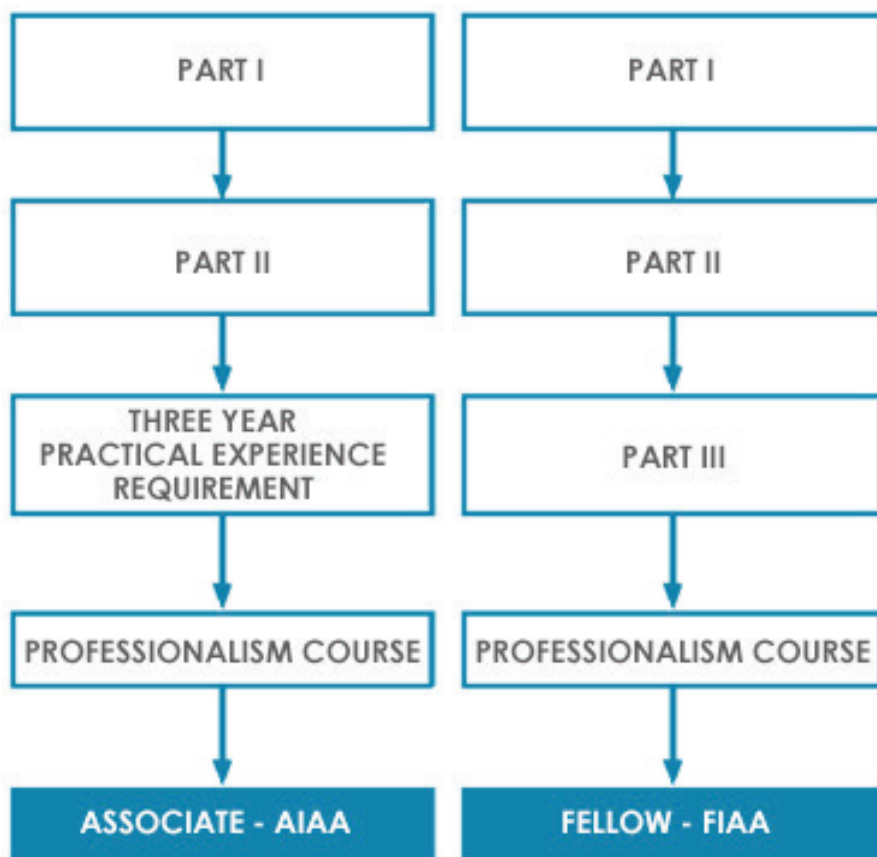
Part III is offered by distance study through the Actuaries Institute and allows you to complete studies in one specialist area of practice:

- General Insurance;
- Life Insurance;
- Global Retirement Income Systems; or
- Investment Management and Finance; plus
- Commercial Actuarial Practice.

Members who complete Part I, Part II, the three-year Practical Experience Requirement and the Professionalism Course can become an Associate of the Institute of Actuaries of Australia (AIAA) and use the designation 'Actuary'.

Members who complete Part I, Part II, Part III and the Professionalism Course earn the qualification of Fellow of the Institute of Actuaries of Australia (FIAA).

By becoming a Fellow, you will reach the pinnacle of the actuarial profession. You'll also be eligible for statutory roles and be able to enhance your subject matter expertise.



Visit www.actuaries.asn.au for more about becoming an actuary.

The Actuaries Institute

The Actuaries Institute is the professional body representing the actuarial profession in Australia.

We're committed to promoting and maintaining a high standard of actuarial practice and supporting our members as they progress through their career.

From educating the next generation of actuaries to fostering a strong professional network, the Actuaries Institute offers a wide range of services that can help you become a successful actuary.

Become a University Subscriber

The Actuaries Institute has a free university subscription for students pursuing an actuarial degree or mathematics and science-related degrees.

Find out more at

www.actuaries.asn.au/UniversitySubscriber

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Together we unlock potential

The Willis Towers Watson graduate programme

What does it take to make the transition from student to professional actuary? One quality that always stands out for senior consulting actuary Tracy Polldore is a strong problem-solving ethic.

Tracy assists with interviewing candidates for the Willis Towers Watson graduate programme. With the company for the past 11 years, she says she's looking for students who can demonstrate more than the ability to work out a maths equation.

"They really need to see the broad picture, because Willis Towers Watson is a consulting firm. You can't just focus on the numbers – it's more about solving the clients' problems and understanding how what you do can help them."

Actuarial analyst Priya Surash-Kumar joined Willis Towers Watson earlier this year when the company acquired the Russell actuarial practice. "One thing that still surprises me and leaves me in awe about working as an actuary is how we deal with detailed information and data and are able to translate that into our clients' language. Actuaries have to operate in a broad spectrum and finding the

balance between highly technical data and what our clients need is challenging. It's an amazing skill to master."

Both Tracy and Priya came to actuarial work from different starting points. "I studied in Hobart where there was one retired actuary in the whole of Tasmania," Tracy recalls. "I was doing a Bachelor of Science majoring in pure and applied maths, but initially I thought my only career path was going to be a maths teacher. But someone I went to uni with had started work as an actuarial analyst and told me I should look at this."

Doing her actuarial studies by correspondence, Tracy eventually moved to Melbourne and realised there was a thriving actuarial profession. "I liked the strong client relationship culture I found at Willis Towers Watson and the size of the office. A major reason I came here was the opportunity to manage a team."

Priya had her sights set on being a concert pianist and is still moving through her piano exams. "But given I really liked maths and accounting, I wanted to blend them. I met one of my dad's friends who was an actuarial

consultant and I thought the work he did was cool."

Priya did a Bachelor of Commerce majoring in actuarial studies and started a Masters before taking the role as an analyst. "To be a successful actuary you need flexibility in your thinking. It's been amazing to learn how to adapt according to your client's needs and see the job change at any moment. I really enjoy thinking on my feet."

Going through the further qualifications needed to become a professional actuary is easier when you're part of a collegiate environment, Priya says. "At uni no-one tells you how to study, but then you get into the work environment and you learn from all these really smart people about how to manage your time and where best to allocate your resources."

Tracy agrees: "The exams can be really hard, so you need that emotional support because, for a great many people, it's the first time they've actually failed at something academically. It can be really confronting until you realise that it's happened to a lot of other very smart people too!"



Tracy Polldore

Senior Consulting Actuary – Retirement Solutions



Priya Surash-Kumar

Actuarial Analyst – Retirement Solutions

was quite taken with the Salvation Army band and I wanted to play the tambourine. When I was a little older in primary school, I wanted to be a stewardess, I thought it was a very glamorous occupation. Perhaps I was just attracted to occupations where you wore a uniform?

What one skill I wish I had:

Priya: I wish I could freeze time, as that way I would be able to make the most of a single moment!

Tracy: I would love to be able to sing, I am a really, really bad singer.

At least once in their life, every actuary should...

Priya: Be able and willing to maneuver out of your comfort zone is crucial. The nature of "traditional" actuarial work is constantly evolving and hence, the courage to embrace new work is vital.

Tracy: Work in a role that exposes them to members or policy holders.

If I could time travel I would:

Priya: I would not go back in time to change the past! I am a believer in the notion that everything happens for a reason. Though, I wouldn't mind going back into the past, say 100 years ago, to experience life back then.

Tracy: I would definitely go forward in time rather than back, probably forward 1,000 years to see how the world had changed.

Four words that sum me up:

Priya: Determined, pragmatic, curious, ambitious.

Tracy: Diligent, collaborative, organised, empathetic.

What advice would you give to a student transitioning to full-time work?

Priya: To be aware and willing to learn during work! It becomes very easy to become trapped in thinking of work as purely a "task to complete". To gain the most out of this experience, I found that questioning the purpose of every task at hand enabled me to learn as well as pick up areas of improvement.

Tracy: Give yourself time to qualify as an actuary, passing exams is only part of the challenge. It's important to balance work, life and study.

The most valuable skill to work as an actuary is:

Priya: This would definitely be the ability to operate at a detailed and high level. An actuary works through a broad spectrum, from understanding detail captured by the data at hand and then communicating the essence to stakeholders. Transparency at both levels is essential to ensure a good job is done.

Tracy: Most people need a bit of perseverance and determination to get through the exams.

What's the biggest challenge about my role?

Tracy: I am a consulting actuary and I also manage a team of analysts and junior actuaries so day-to-day

my job involves a lot of juggling and prioritising of work. For an actuary in the superannuation area one of our main challenges is keeping up with all the legislative changes and working out how best to assist our clients make sense of them.

Priya: Balancing the time spent between the details of a task and the purpose of the deliverable is a challenge. It is important to take a step back at times and think about the big picture, to avoid being overly caught up in the detail!

10 years from now I will be:

Priya: Hopefully a superannuation actuary (or as I like to call it a "super actuary"!)

Tracy: Our industry is changing so I will be working in the financial services industry advising clients on risk management but it's difficult to know what that will look like.

What I wanted to be when I grew up:

Priya: It started off with me wanting to be a pianist who would travel around the world! As reality sunk in, it transitioned into a desire to become a biomedical engineer (even though science and I were polar opposites!!). Finally, it was not until I met an actuary that I knew with absolute certainty as to what I wanted to be!

Tracy: When I was very young I

Willis Towers Watson – who we are

Willis Towers Watson (NASDAQ: WLTW) is a leading global advisory, broking and solutions company that helps clients around the world turn risk into a path for growth. With roots dating to 1828, Willis Towers Watson has 40,000 employees serving more than 140 countries.

What we do

We design and deliver solutions that manage risk, optimise benefits, cultivate talent, and expand the power of capital to protect and strengthen institutions and individuals. Our unique perspective allows us to see the critical intersections between talent, assets and ideas – the dynamic formula that drives business performance. Together, we unlock potential.

Our actuaries work closely with ASX-listed companies, multinational corporations, institutional investors and major superannuation funds. More widely, Willis Towers Watson services clients of all sizes, including SMEs and startups.

We pride ourselves globally on a strong client focus, an emphasis on teamwork, unwavering integrity, mutual respect and a constant striving for excellence are the values at the core of Willis Towers Watson's rich history. Your experience with us will consistently link to our company values – which we keep firmly in sight. These values will continue to define our approach to business and our relationship with our clients, now and in the future. They are a vital part of who we are. They are what unite our company.

Additionally, we believe that many of the greatest ideas and discoveries come from a diverse mix of minds, backgrounds and experiences. We

are committed to cultivating an inclusive work environment enriched by our people, our clients, and the communities in which we work and live. Our commitment to inclusion and diversity shapes our approach to serving clients, delivers sustainable, profitable growth and creates a supportive environment for all of our colleagues.

Here are some of our global awards:

- World's Most Admired Companies, FORTUNE magazine, 2016, 2015, 2014, 2013, 2012
- Diversity Value Index placement, Talent Management magazine, 2016, 2015, 2014
- Best Places to Work for LGBT+ and Allies Equality, Human Rights Campaign's Corporate Equality Index, 2016, 2015
- Diversity Champions Member, Stonewall Organisation, 2015
- Consultant of the Year, International Association of Black Actuaries, 2015, 2014, 2013, 2012, 2011
- Diversity and Inclusion Honour Roll, Exelon Finance, 2015, 2014, 2013, 2012, 2011
- Exemplary Employer Award, Tripartite Alliance for Fair & Progressive Employment Practices, 2014.

What we can offer you

Whether you are a student at an early stage of your university experience, approaching your final year in school, or a recent graduate, we have an opportunity for you, with a broad range of career options.

We are seeking talented and intellectually curious university students who'd like to kick-start their careers via varied learning experiences across business segments.

You will have the opportunity to take charge of your career, collaborating with some of the world's experts in our industry.

Our graduate programme members are the future of our business and we invest a great deal of time and energy in their development.

A key consideration for students is a combination of the right sort of experience in their professional role and study support. We offer graduate programme members a substantial number of study days to help them prepare for professional exams, as well as a significant contribution towards tuition materials, exam costs and travelling expenses.

Get in touch

Students about to graduate or in their final year of study can apply to Willis Towers Watson's graduate programme. Applications open each year in February for graduate roles and July for vacation roles.

For more details, please contact Nicole Lauritz:

nicole.lauritz@willistowerswatson.com or +61 3 9655 5432

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$$d^{(m)} \ddot{a}_{\overline{x:m}|}^{(m)} + A_{\overline{x:m}|}^{(m)} = 1$$

Numbers don't define us

Starting your career with Finity gives you amazing personal and professional development opportunities.

Our project-based approach to problem solving means you get to work with multiple people across the firm at any one time. On a daily basis, you'll have many on-the-job mentoring opportunities.

And the people you work with? They just happen to be industry leaders and technical experts who enjoy seeing you grow and develop.

We look after our aspiring actuaries with market-leading study support and remuneration, and are proud to say our graduates achieve double the average pass rates for their actuarial exams.



Decision Scientists

Organisations call Cause Way when they have a big decision to make. They ask us to do what we're good at - analyse the history and the context, and forecast their future financial outcomes. We project not only "best-estimate" outcomes, but also the full range of possible outcomes, applying financial mathematics, statistics, economics and data analytics techniques.

We want to do good in the world and invest in causes. Our strategy to achieve this is:

- Work with corporates and the public sector to support them in their mission cause as they try to create value in the world (aiming to invest 60% of our time here)
- Work with social sector organisations, supporting them in their mission / cause (aiming for 30% of our time)
- Apply our skills and creative thinking to thought leadership and the seeding of new ideas and lines of business (10% of our time)
- Leverage synergies from our work across these three activities
- We are time-givers rather than money-givers investing our skills and time at reduced rates into social causes. To maximise our capacity to do this, we:
 - Reinvest 100% of our profits into our activities - we are a not-for-profit social enterprise
 - Have a hybrid salary structure - partway between a commercial and social sector model - to reflect our mix of clients
 - Employ pro bono workers on our social sector and thought leadership activities

Current Fields of Work



Strategy
and
Growth



Forecasting
and
Modelling



Capital
Management



Pricing



Relational
Analytics

Are You Ready for an Adventure?



**Jevon
Fullbrook**

“

Working at Cause Way is a struggle, because every day pushes me to become a better person. As a graduate I knew I had a lot of development room, yet I had no idea how much. I have made more mistakes than I thought I would make in my entire career in my first 8 months, yet Cause Way has a culture that encourages learning from mistakes and working to best resolve them rather than one where mistakes must be avoided at all cost.

At Cause Way, the organisation's values are not just words but take on real meaning in a daily basis through the work we do with clients and internally. Personal development opportunities are constantly presented, so far I have been incredibly fortunate to attend a conference on relational analytics focusing on the measurement of and maintenance of relationships, co-present at the Actuarial Financial Services Forum as well as consult directly to clients. The work itself has been varied, exciting and relevant to my background in actuarial studies.

”

"Growing in an environment that focusses on and fosters relationship building, interconnectedness and soft assets."

Leonard Seok

"Everyone is willing to go an extra mile to help out whenever the need arises."

Rui Jin

"Great team, great people, great ideas doing things that matter."

Pamela Varela

Cause Way Would Like to Talk to You!

An actuarial student with a heart for social causes who is willing to trade off some salary for increased time investment into their social and personal causes.

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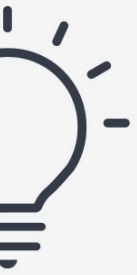
Emotional

Specialist & t

// **Never underestimate the power of**
Adam Driussi, CEO

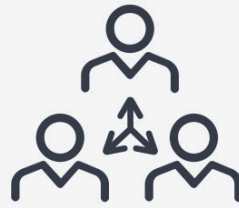
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$$\frac{1}{m} \left(I^{(m)} \ddot{a} \right)_{\overline{n}|}^{(m)} = \left(I^{(m)} \ddot{a} \right)_{\overline{n}|}^{(m)}$$

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$$= \exp\left(-\int_0^x \mu(y) dy\right)$$

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$$d^{(m)} \ddot{a}_{\overline{x:n}|}^{(m)} + A_{\overline{x:n}|}^{(m)} = 1$$

WE'RE FOR YOU

Start your career with AIA Australia!

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"AIA's Actuarial Graduate Program is the perfect platform on which to kick-start your Actuarial career. Surrounded by a passionate and friendly team, you are immersed in an environment and culture that is designed to develop a broad range of skills and set you up on the path to future success. I have been able to develop at a high level in a short time, mainly thanks to the support of those around me who are always willing to give their time to help me grow and learn to the best of my ability. I could not recommend AIA enough." ---- Michael Kaboukos- AIAA 2017 Actuarial Graduate.

Want to know more? We'd love to hear from you:

Annie Chen: Annie.Chen@aia.com

Joyce Wang: Joyce.Wang@aia.com

Edan Haddock: Edan.haddock@aia.com

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Actuarial Services.

A clear view of the financial future

In today's complex business environment, developing a sound strategy using global insight and local reach is critical. As part of EY's global actuarial network, and a leading actuarial consultancy in Australia, our team helps clients profitably grow their businesses in spite of this complexity.

Meet our people
bit.ly/EYActuarial_Services



We apply actuarial skills to a wide range of traditional and non-traditional areas, including:

- ▶ Insurance (life, general, accident compensation & private health)
- ▶ Banking and capital markets
- ▶ Wealth management and superannuation
- ▶ Risk quantification and management
- ▶ Government (including health and human services)
- ▶ Advanced analytics and modelling

As part of the team, you might:

- ▶ Design and price products taking into consideration market developments, client objectives, current product profitability and marketing issues
- ▶ Assist insurers with an assessment of their capital stability under various stress scenarios
- ▶ Value exotic derivatives using sophisticated stochastic modelling
- ▶ Perform due diligence, business valuation and provide assistance with mergers and acquisitions
- ▶ Value liabilities for insurance companies, regulators or other businesses under a range of circumstances
- ▶ Work with professionals from other EY service lines to support businesses and governments in their decision making
- ▶ Perform detailed analytics on large and complex datasets to answer a variety of business problems

The Actuarial Services team has grown considerably over the last few years, with over 100 professionals across Sydney, Melbourne and Canberra.



"I chose to work for EY because of the positive experience I had as a vacationer. As a vacationer

and graduate I've enjoyed the diversity of projects, including the opportunity to work on projects with other service lines. I've developed my technical skills, as well as other valuable skills like project management and stakeholder management.

EY gives a lot of encouragement and support in my development. My colleagues are engaged with my preferences on the types of projects I'd like to work on, take the time to explain concepts, and give me additional responsibilities if I want to extend myself.

The people at EY are kind and sociable, and I've made many good friends during my short time here. EY ticks all of the boxes for me!"

Ayeeda, Sydney

This growth is expected to continue into the future as we support EY's Vision 2020 strategy.

We're looking for confident, dynamic, highly numerate students with strong communication skills, who can add to the diverse mix of our team. We accept applications for our Vacationer and Graduate Programs from students across all degrees and universities, although a focus on Actuarial Studies would be an advantage.

At EY, you'll have all the coaching, formal training and leadership development you need to become a trusted business advisor. You'll have experiences that will set you up for success, both now and in the future.

Do you have what it takes? If you want to change how the world works and leave a lasting legacy, apply to Actuarial Services.

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At IAG we are exploring the future of home insurance.

And we believe that being data driven and customer lead is instrumental to this future.

The analytics team at IAG is a driving force behind this approach. We use advanced data science techniques that turn the company's vast bank of data into meaningful insights for decision making.

Analytics spans the following areas:

- **Group actuarial:** advises the Chief Actuary and executives across the company to understand and manage consolidated risk and provide pragmatic advice on maximising enterprise value.
- **Data analytics:** provides predictive modelling, personalisation and optimisation services to drive customer led, data driven decision making
- **Technical pricing:** ensures strong financial performance.
- **Reserving:** forecasts reserves for claims and premium liabilities, and provides insight and advice on emerging claims trends.

At IAG you will be exposed to a supportive environment that encourages the development of its people. Beyond IAG's leading approach to culture, flexibility and work-life balance, graduates participate in a career development program, complete with engaging buddy and mentor initiatives. There is also generous study support which includes leave, fee payment and organised study groups.

We are looking for experimenters who identify patterns and anomalies and solve complex problems.

If you are a high performing graduate with the following skills and attributes:

- Mathematics, Actuarial, Data Science or other analytical degree
- Welcomes challenges and embraces opportunity
- Strong analytical and problem solving skills
- Strives for continued learning and development
- Innovative; think outside the box mentality
- Confident verbal and written communication skills; turning complexity into simple advice

We would love to hear from you.

To find out more, please contact our Talent Acquisition team (Recruitment@iag.com.au), or visit our website:

<https://www.iag.com.au/analytics>



Actuarial

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Who we are

PwC Actuarial is one of the largest actuarial and financial risk consulting groups in the Asia-Pacific region, with over 50 qualified actuaries and 180 consultants located in Sydney, Melbourne, Perth, Auckland, Wellington and Shanghai. We are part of a strong global network of PwC actuaries with presence in North America, UK, France, and the Asia-Pacific.

What we offer you

- A greater **choice** of career opportunities, with **outstanding** career development opportunities
- **Varied** work experience, with **exposure** to real client work
- **Flexible** work practices
- Unrivalled **training** and development **support**
- Social and sporting **activities** and a great team **culture**

We offer a graduate program as well as a vacation internship program between December and February each year.

Where to now

Career Contact:

Kelly Lee
Phone: (03) 8603 0480
Email: kelly.a.lee@pwc.com

More about PwC Actuarial:

www.pwc.com.au/consulting/actuarial-analytics

Graduate & Vacation Applications

www.pwc.com.au/careers

Our work

PwC Actuarial specialises in the following areas:

General Insurance & Accident Compensation

- Integrated reserving, monitoring and pricing
- Risk and Capital Management
- Advice on the impacts of regulatory change
- Implementation of strategies for portfolio and claim management

Banking and Financial Services

- Wealth management / Unit pricing
- Credit and other risk management for banks
- Economic Capital
- Control failure investigations
- Life Insurance

Retirement Incomes and Investments

- Financial valuations and projections
- Traditional superannuation advice
- Strategic and investment advice
- Risk Management, Governance and Compliance

Health Actuarial

- Data analytics
- Policy, Governance and Regulatory Design
- Service and Capacity Planning
- Activity Based Funding

“What I seek in a workplace is somewhere that offers a range of opportunities for me to explore, and has amazing people that support me along the way. This is exactly what PwC provides. Since starting at PwC three years ago as a vacationer, I have worked on general insurance valuations for various accident compensation schemes, a statistical review of banks’ capital models and a valuation of points breakage for a loyalty program.

PwC has a high-performing and supportive culture which has helped me to explore my passions while achieving a good work-study-life balance.”

*- Lucy Feng
Graduate of the University of Melbourne, 2013*



SKL Actuarial



About SKL Actuarial

Our consultants bring over 40 years of actuarial recruitment experience in Australia, across Asia Pacific and in the UK. Two of our consultants are Fellows of the Actuaries Institute so we offer a depth of understanding of the work undertaken by actuaries as well as the skills and knowledge they offer.

SKL is an Actuarial Recruitment Specialist

We recruit at all levels from Chief Actuary and partner to junior analyst and for all roles where actuarial and quantitative skills are highly valued. We bring a deep knowledge of the market, including technical expertise, very strong networks in the profession and a consultative approach. We will be honest, ethical and professional in all our dealings with you. This includes providing realistic advice about the market, industry and prospects. We are committed to working in partnership with you and will share our knowledge and experience to achieve the best result for you whether you are seeking to hire an actuary or are looking for a new opportunity.

For questions regarding the actuarial market & your career, please contact us at info@sklactuarial.com.au

CV Tips

- Clear, simple & easy to read
- 2 pages max.
- 1– 2 paragraph of overview or summary
- University & Actuarial qualifications
- Achievements (HDs, prizes, awards... etc.)
- Employment history - start from the most recent
- Software skills
- Soft skills & Extra-curricula

Tips for a Successful Career

- Leadership
- Communication
- Team work
- Be curious, ask questions
- Courage, be open to taking calculated risks
- Determination & dedication
- Time Management

Interview Tips

- First impressions do count!
- Do some homework about the organisation, the position & the people you will meet
- Prepare examples to illustrate your capabilities (Behavioural & Technical questions)
- Prepare a few questions to ask
- Listen carefully to the questions & take a moment to think before you answer
- Speak clearly & confidently
- Maintain eye contact
- Relax & be you!



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At Taylor Fry, we love highly numerate graduates.

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We offer competitive remuneration packages, including profit share based on company performance and the potential for equity ownership, as well as generous study support while you work to qualifying as an Actuary. We have a relaxed office environment with casual dress code (unless you're meeting with clients). We value honesty and directness both with each other and with our clients. So you can expect a welcoming and comfortable workplace.

About Taylor Fry

Taylor Fry is a leading analytics and actuarial consulting firm providing advice to a wide range of business and government clients. Established in 1999, we now have 60 staff working across our three offices in Sydney, Melbourne and Wellington. We're also 51% owned by Qantas Loyalty.

Want to work with us?

Our graduate recruitment process begins in February and we also periodically take on interns.

For more details

Check our website taylorfry.com.au or follow us on LinkedIn

Questions?

Email us at recruitment@taylorfry.com.au

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**DeepDream: Google's AI Making
Thousands as Artists**

The power of the Blockchain

Sportsbetting10001

Improving studying by not studying

What is the return on your investment?

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$$\frac{\partial}{\partial t} \ln l_{x+t} \quad t p_x = 1 - t p_x$$

$$= \exp\left(-\int_0^x \mu(y) dy\right)$$

$$\left(I^{(m)} \ddot{a} \right)_{\overline{x:n}|}^{(m)} = \frac{\ddot{a}_{\overline{x:n+1/m}|}^{(m)}}{1/m} - 1/m$$

$$d^{(m)} \ddot{a}_{\overline{x:n}|}^{(m)} + A_{\overline{x:n}|}^{(m)} = 1$$

DeepDream: Google's AI Making Thousands as Artists

Inspired by TedTalk - The Art of Neural Networks, Mike Tyka

Artificial intelligence is such a buzzword right now – how behind the times we would be if we were to not mention it in this year's Vision! But in this article, I will not go on about autonomous cars, the internet of things and all the other magical advancements of technology. Instead, I shall attempt to give a brief glance at a lesser known area of AI research – *Inceptionism*: attempting to look inside artificial neural networks and visualise what computers “see”.



Castles In The Sky With Diamonds by Mike Tyka (2016)

In very simple terms, artificial neural networks are computer systems inspired by biological neural networks, such as our brains. These networks were designed to solve problems in a similar way that a human brain would. They complete tasks by considering examples, starting off as unorganised machines consisting of simple base units analogous to the neurons in our brains, get progressively better through learning and then organise themselves. Today, neural networks are widely used in image classification and speech recognition.

In very simple terms, artificial neural networks are computer systems inspired by biological neural networks, such as our brains.

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In an attempt to better understand and peek inside these networks, Google's software engineers invented a technique called “Inceptionism” and the DeepDream program. These engineers train an artificial neural network by asking it to process millions of images of an object until it begins to generalise patterns of the object and be able to correctly classify test images. For example, they might feed the network different pictures of dogs and the pixels of these images are processed by the network through multiple layers. Each layer progressively looks for higher and higher level of details of the features of a dog, such as floppy ears and curly tails. Eventually, the network reaches an answer: “is dog” or “is not dog”.

At the start, the network will get it right about 50% of the time (it's purely guessing). The engineers can then adjust the communication between the neurons and the layers, training the network until it is able to correctly classify pictures it has never seen before.



A puppy photo of my dog, Staffy, enhanced by DeepDream generator

This poses a question as well as a challenge: how do we know what is happening exactly at each of these layers? How do we know that the network has successfully learnt the features of a dog? One technique is to turn the network upside down – instead of asking it to classify images, we will ask it to generate images. We give it an input image, which can simply be an image of random noises, and ask the network to enhance the image in a way that brings out specific features the network knows about the object it was trained on. This is what the google engineers called “Inceptionism”. If the network knows how a dog should look like, it should be able to produce pictures that look like a dog and so on.

In the two images of my dog above, the right one has been processed using this technique at deepdreamgenerator.com, a website where you can create your own strange and almost psychedelic images. We can see that the network has recognised the garden tap and hoses in the top right corner as a bird, the leaf on the ground as some kind of insect and the short fur coat of the dog as feathers.



Enhanced logo of the Actuarial Students' Society

Interestingly, depending on which layer in the network we apply this technique to, the result reveals the specific feature that layer analyses. The earlier layers care about lower level features, such as lines and dots as we seen in our enhanced ASS logo. Incrementally, the later layers care about higher level details, such as the bird we can see in the dog photo.

Let's address the elephant in the room before you call me a clickbaiter – how did these neural networks make thousands of dollars?

Last year in February, Google partnered with a non-for-profit organisation exhibited an art show of some “paintings” created using DeepDream, including the first and last image in this article, and raised thousands of dollars for

charity. Some of these computer generated artworks were sold for as much as 8000USD! Any biddings for my dog's photo?



Style Is Violins by Mike Tyka (2016)

Apart from DeepDream, there are many members of Google's “DeepMind” artificial intelligence family. Such as DeepMind: AlphaGo, the first ever computer program to defeat a Go world champion, crowning itself the best Go player in history. And more recently, DeepMind Health, an AI doctor that might one day be diagnosing you.

You may have noticed, everything mentioned in this article is not cutting edge technology. The TedTalk was given in 2015, the auction was in 2016, Alpha Go also won its first match against a professional human player in 2015.

Nevertheless, the exciting age of artificial intelligence is near. One day, these supercomputers may outperform our human brains, but that's a discussion for another day. What I want to share with you is: embrace technology and be the first ones to find ways to integrate it with your field of expertise. Be the actuaries who first started using Microsoft Excel to build their financial models! Winter is coming.

Angel Yuan
Media Officer

If you would like some further readings on DeepDream:
<http://www.tedxtum.com/past-events/2015facets/dr-mike-tyka-the-art-of-neural-networks>
<https://research.googleblog.com/2015/06/inceptionism-going-deeper-into-neural.html>

The power of the Blockchain

With the value of one Bitcoin recently exceeding \$5500 AUD at the time of writing, and the cryptocurrency market being worth almost \$150 billion, this new form of currency has surged in value in less than a decade. The very first cryptocurrency, known as Bitcoin, was invented in 2009 by Satoshi Nakamoto. He had aimed to create a currency without the need for a 'central bank'. Soon after, other cryptocurrencies such as Litecoin, Ethereum, and of course, Dogecoin, were created from the original idea. Being a relatively new technology, many people do not have a strong understanding of how Bitcoin works, so this article will attempt to explain some of its driving principles. Additionally, and probably more interestingly, some of the foundations that allow Bitcoin to work have been theorised to also be applicable to the insurance industry.

Why are cryptocurrencies becoming so popular?

The popularity of cryptocurrencies can be attributed to a number of benefits it holds over traditional money. These include:

- *Security* – The power of cryptographic techniques mean that it would be impossible to crack into the system in a reasonable time frame.
- *Decentralised* – The lack of a third party mean that governments and others are not able to regulate or influence the market. Additionally, this means there are extremely low, if any, processing fees and costs usually charged by banks.
- *Anonymity* – Bitcoin accounts do not need to be linked in any way to real-world identities. However, this has come with some concerns as illegal transactions can occur easily and anonymously.
- *Instant access and certainty* – Transactions occur almost instantaneously and once completed, cannot be reversed.

So how does it work?

For a digital currency to operate efficiently, it is necessary to have accounts, balances of these accounts and a way to conduct transactions. In normal everyday financial systems, people guarantee the legitimacy of financial transactions through the use of a third party, normally a bank or an entity such as Paypal. These entities keep track of all transactions to ensure financial records are accurate. The driving principle of Bitcoin is the ability to remove this third party. However, the main issue that this introduces is the ability to easily misrepresent the amount of money you have – if there isn't a bank, what is there stopping you claiming you have a billion dollars? Before Satoshi's creation, it was initially thought to be impossible to have this verification.

Even traditional currencies are just verified entries in a database – usually with a bank. To remove the need for banks, cryptocurrencies involve a huge network of people – known as peers. All the peers will have a record of every single transaction and also the balance of every account. To maintain the integrity of the log, all transaction requests are sent to 'miners' who confirm the legitimacy of the transaction. Once confirmed, it is set in stone and cannot be reversed or changed. These confirmed transactions are combined with other transactions to form a block of data. This block of data is then added to existing blocks, forming a 'chain'. This will then be added to the database of every peer. This technology is known as a blockchain.

You may have heard about Bitcoin 'mining'. The main job of miners is to confirm transactions; they do this through solving cryptographic puzzles and for their efforts, they receive bitcoins. To prevent hyperinflation of the currency, the difficulty of the puzzle increases with the total computing power in the pool, so only a fixed amount of currency can be created in an amount of time.

What does this have to do with actuaries?

As interesting as cryptocurrencies may be, how does this apply to me? Modern-day insurers are similar to banks in that they act as an intermediary in a transaction. Currently, most if not all insurers are primarily focused on optimising how things work within their own organisation. However, a technology like blockchain allows the ability to address industry wide problems and opportunities. Consider a large decentralised database that would be accessible by every insurer. Data can be updated instantaneously. With more streamlined processing, there can be improvements in customer experiences. Another benefit would be that the database would be able to hold both customer and external data to independently verify the authenticity of claims and transactions. For example, being able to prove the date and time of policy issuance or being able to check for police reports, identity verification or to detect patterns of fraudulent behaviour. The ability to establish an improved mutual trust can provide great value to insurers. However, with any emerging technology, there are challenges. Security, scalability and legal risks are all still unexplored. Additionally, a crucial aspect to allowing the technology to work is being able to build partnerships throughout the industry.

Blockchain technology is still extremely new and it is impossible to say where it will go and what impact it may or may not have in the future for insurance. However, one thing for certain is that technology is rapidly evolving and will almost certainly influence the work we will conduct in our careers, and as actuaries, we must explore and be open to this changing landscape.

Rui Jin
Treasurer

Sportsbetting IOOOI

As actuarial students, we analyse risk. We don't control uncertain outcomes; we attempt to quantify them and adequately prepare for potential differences in observed results. Essentially, we rely on the law of large numbers to expect some sort of result and to attribute some risk around it. Once we are confident the risk around our expected number is under control, we put our money on it. This sounds like a perfect degree if you want to be a sports punter.

Disclaimer: this article does not discuss how to make money nor is it trying to motivate readers to sportsbet. It is just an insight into the relationship between sportsbetting and actuarial studies.

The premise of sportsbetting is very simple: a market maker decides to collect small amounts of money from a large number of people. They ask everyone to place a bet on something and the winners take a share of the pooled amount of money, minus a cut. Many bookmakers have built on this by introducing the concept of odds. The inverse of the odds implicitly defines the probability of you winning your bet. For example, betting on Federer to win the Australian Open was at \$17 odds. If he won, you would get a 1600% return on investment (ROI). The bookmaker is essentially taking a 5.9% ($1/17$) position/probability on Federer to win. Logically, adding up the positions on all players/bets involved, the bookmaker's total position should be over 100%. Whatever surplus they charge represents the ROI for them. Of course, if you find an exhaustive combination of bets with a position totalling less than 100%, you have an arbitrage opportunity (the bookmaker's position is not long enough to hold the entire risk of the bet).

Back to the Australian Open example, Federer's odds were 1.6 and Nadal's odds were 2.3. This implies that the bookmaker had a position of 62.5% on Federer and 43.5% on Nadal. The total position was 106%, meaning the bookmaker should have experienced a return 6% on this game.

How do you come up with a strategy + arbitrage?

Every sportsbetter has a belief of why they can win in a zero-sum game. I believe in statistical arbitrage in sports because if you can measure player form better than the occasional punter, you could make money in the long run.

Knowing that bookmakers solely aim to balance their positions given bets made by other bookmakers, a strategy is to capture data that the casual punter would ignore. Ultimately, a strategy is whatever you want it to be. All you need is data (to test your strategy) and common sense. For example, a very simple strategy is betting on the tennis player who has had more break points in recent performances. This strategy is logical – break points have a positive correlation with winning the match. However, this is hard to normalise and quantify.

Suppose player A has averaged 10 break points in his last 10 games and the other has averaged 6, how can you come up with a probability that player A will win? A starting point could just be to normalise the 2 figures against each other such that player A has a 10 in 16 chance to win. This implies odds of 1.6. So if the actual odds for player A are 1.8, you have a statistical arbitrage.

Of course, this arbitrage only exists given that your model is correct (which is hard). A lot more variables/statistics and normalisation techniques would be required to even get a model to be slightly accurate. Getting data is also a difficult task.

The most important thing in statistics is not to come up with some sort of solution or probability, but to attribute an error (or confidence interval) around it. It is vital to consider some measure of risk (variance) as well as the average. Using the break point idea again, player A averages 10 break points with a variance 16. Player B averages 6 break points with variance 9. Now what is the probability player A will win (given that this is the only data we have).

If you are lazy like me, you can just use Monte Carlo simulation to work it out, or you can create another variable of player A minus player B (mean 4 with variance 25). This assumes independence which is also a very strong assumption. Considering new information in the form of variance, player A's probability of winning goes to 79%, a lot bigger than the previous 10 over 16 (62.5%) figure. Once again, you can see that simple models are very volatile; they will never work.

Risk management and analysing results

Once you have a model and probabilities of winning, you will need to test if it works, by mapping your model against actual odds and performing a statistical test. The null hypothesis should be that your model maps the actual probabilities well with a certain significance level. The question that arises is do you want H_0 to be rejected or accepted? If want it to be accepted, you would assume the model and market matches which yields a small amount of outlier bets that (technically) should work well. If you reject H_0 , you would have more betting opportunities, but you risk your model actually being inaccurate. Either way a lot of judgment is required.

The last stage of a sportsbetting setup is the ability to manage risk. If your bet plays well, but loses unexpectedly, your maximum risk level is the amount of stake you were willing to have placed on that (good) bet and lost.

It is important to factor in your risk level per bet relative a total risk level (pot). It is also imperative to not only control your losses but also make it possible to normalise your bets. Normalising bets means to have a constant risk per bet to begin with. Too many punters change their risk levels based on emotions, which will lead to a positive probability of losing a lot of money in the long run.

Concluding remarks

Gambling is a dangerous game, as all zero-sum games are. People have made a lot of money, and people have lost a lot of money. From my very short experiences betting, hopefully you learn about discipline, character and trust under pressure. Finally, gamble responsibly – never define your pot to be more than you can afford to lose.

Max Yang
Third Year Student

Improving studying by not studying

Part of growing up includes taking on an ever-expanding array of work and responsibilities. Particularly for actuarial students, this sometimes culminates in graduates juggling full-time consulting hours, multiple subjects by Distance Education and their own families and lives. Most of us would be familiar with the meme that suggests that we can only ever have two out of social life, studies and work. It's a classic case of robbing Peter to pay Paul, but what if attending to Peter paid dividends for Paul?

For me, the answer is my hobby – piano. Benefits of playing an instrument include: improved memory, reduced stress and increased creativity. However, I will not go into detail here, and instead focus on those that I believe are particularly pertinent to actuarial students.

1. “Screen” time

Let's face it, we spend most of the day looking at phone or computer screens. University materials are distributed online, lecture capture (not applicable to Accelerated Mathematics II) is an online service, and many of our jobs will require us to use computer programs such as Microsoft Excel. On that last point, a professor famously claimed (paraphrased): “If you do not like Excel, then it's not just that you shouldn't be doing actuarial studies, you shouldn't be doing a Bachelor of Commerce”.

“Screen” time is like ice-cream in the sense that we enjoy it as a kid but regret it as an adult when we have diabetes. It often causes eye strain, which may further result in eye irritation, fatigue and dryness. Playing music can help alleviate and prevent these symptoms. Most instruments are completely mechanical and sheet music printed on paper, so there is limited exposure to the harmful blue light from digital screens.

Playing an instrument is a good chance to rest your eyes, as many musicians play with their eyes closed and rely on their muscle memory. Try adjusting a mathematical model in Excel with your eyes closed.

2. Increasing concentration

I often see students yawning and fidgeting restlessly during lectures. At five minutes to the end of the lecture, many pack their belongings before the lecturer has finished speaking. Perhaps as hardworking actuarial students, this is because they have been studying throughout the night. However, I believe that this is a wider epidemic where students are unable to concentrate for extended periods of time. This is perhaps caused by phone notifications, which constantly disrupt our train of thought with a banner and an accompanying vibration. As the same professor professed (paraphrased): “a study has shown that a person's IQ falls by 10 per cent when they have their phone in front of them”. A great way to improve concentration is to learn a new piece of repertoire. After sight-reading the piece and writing notes on the music manuscript, an hour will have passed before you know it. Then you'll want to keep going, until you get called for dinner.

3. Improving resilience

Working in the professional services industry can subject one to high pressure. With strict deadlines and harsh performance reviews, some people may lack the mental tenacity to deal with such situations. Actually, many musicians are trained to withstand expectations and pressure. In concerts, pianists will need to make numerous adjustments to their touch and pedalling on an unfamiliar instrument and acoustic, all under the watchful gaze of an audience. In the event of a wrong note or memory lapse, musicians must bounce back and remain composed.

Moreover, musicians are also subject to frequent criticism. During lessons, teachers will often pick up on flaws, rather than the positives. However, most musicians are accustomed to criticism and accept it as a necessity to improve. They will most certainly not be afraid of a performance review!

Almost counterintuitively, adopting an instrument pays dividends to our studies and our well-being. Therefore, next time instead of doing some simple algebra exercises, pick up an instrument! Of course, remember to put away your other toys first.

William Soo
Sponsorship Officer

What is the return on your investment?

Hopefully it's an easy question worth a few marks. But sometimes, you have to answer your own questions which aren't so easy or straightforward. Here's one question that I have asked myself and you probably have too.

At $t = 0$, where t is in years, I entered the BCom, majoring in actuarial studies. I was expecting a three-year degree, a lot of numbers, and a lot of calculations. This was my tertiary education, this was a lifelong investment, but what would be the return on this investment?

As you read this, I am fast approaching $t = 3$. Three years ago, I wondered what I would have at the end of my degree. New techniques to solve integrals? A vast knowledge of probability? An ability to price life insurance contracts? I still do wonder about that. Just kidding.

Over the three years of my degree, there was more than just deriving mathematical proofs or solving a large number of expected returns. But the answer to the question regarding the return on your time at university isn't a numerical result. The answer is, well, you. As I look back over my three years, here are a few investment decisions I made, which has provided me with a relatively high return over these three years (well I think so anyway).

Investment Decision #1 - Study with peers

There were times early in my degree (or *investment period* per se) where I did nothing more than study and solve equations, day in, day out. There were days where my motivation was much like a non-increasing survival function.

Don't lie – you know you've had times where motivation seemed to be strictly decreasing, and the number and difficulty of questions just seemed to rise exponentially.

However, studying with friends not only kept me motivated throughout the years but helped me develop approaches to questions that I would not have known otherwise. Ask clarifying questions and pick at each other's brain for different tricks and techniques – you'll be surprised at how much you can learn from your friends; even the ones who fall asleep in lectures.

Investment Decision #2 – Get Involved

I am sure you have heard this one constantly and I am also sure that some of you have disregarded it – in my first year, I did too. Maintaining high marks is always ideal and important, but there's more to life than just marks – it's about balancing study with other activities to keep a well-rounded life style.

For those career-minded teens who think marks are everything – which I did too – you might be surprised. When you start interviewing for internships and graduate positions, recruiters look for more than just marks. They also look for extra-curricular activities to see what BCom students do beyond their twelve contact hours – sleeping and gaming are not extra-curricular activities!

Get involved and be a part of something you are passionate about. As an actuarial student, there is no better place to start than the Actuarial Students' Society (ASS). Through ASS events, I have learnt new ideas and approaches to programs such as Excel and have been able to network with key figures to gain insights into the actuarial industry. This is an investment in understanding the field of work you'll be entering in a few years' time.

Investment Decision #3 – Self Belief

Maybe this is a given. However, the number of Hr's in my third year dwarfed the number of third-year students with self-belief (and there weren't many Hr's). It is important to invest in yourself.

*You are in this degree because you deserve to be,
You worked hard to be here or maybe you are a
prodigy,
It's a tough gig each day to complete some Actuarial
study,
This is not easy, I'm going to fail, please help me...*

Do you like my poem? Who said that we maths lovers couldn't draw parallels to Shakespeare?

The work was never meant to be easy. Actuarial studies is difficult and sometimes quite frustrating due to the nuances and intricacies you need to be aware of. But it's interesting and it's stimulating. Don't give up on a question just because you can't do it – believe in yourself and your ability. It does not matter how much you study if you do not believe that you can achieve the results you seek. Learn to look at the silver lining in every cloud and stay optimistic because generally, there's a solution to every problem if you are willing to find it (even the problems that look impossible in your actuarial degree).

Fellow investors, there you have it – a few investment decisions that were vital in enriching my student experience. That isn't to say that these tips are the be-all and end-all. As Benjamin Franklin once said, "*An investment in knowledge pays the best interest.*" Along with the study you do for your university subjects, educate yourself in regards to the opportunities that are available to you to partake in whilst in university – it's never too late to participate.

Invest your time into these activities in different proportions and create the optimal portfolio based on your preferences. At $t = 3$, you too can see how much more you have gained than you initially thought.

I now pass the baton to you. What is the return on your investment?

Tishan Paranehewage
Student Engagement Director



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