

# OSCAR TIN YIU LAI

Australian Citizen

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U13 4-8 Mildred Ave, Hornsby, NSW 2077

## PERSONAL STATEMENT

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I am an enthusiastic individual who persuade to exceed expectations. Collaboration and working as a team always helps me to think in a new angle. I am interested in solving complex challenges while developing elegant solution and algorithm. The world of abstract thinking brings the beauty of simplicity. To me, engineering is about simplifying complexity.

## EDUCATION

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**University of Sydney**, Camperdown, NSW 2006 Mar 2018 - Present

Doctor of Philosophy *in Engineering & Information Technologies*

- ▷ Research interests: Machine learning in field Robotics on Reinforcement Learning
- ▷ The aim is to develop reinforcement learning (RL) agent that can learn policies directly from high-dimensional sensory inputs, and makes value judgement based on both spatial and temporal scale by estimating total rewards that an agent can expected with minimal human interference.

**University of Sydney**, Camperdown, NSW 2006 Mar 2013 - Nov 2017

B. Civil Engineering *in Structural* & B. Science *in Computer Science (Honours Class I)*

- ▷ Civil Engineering specialised in Structural, core studies included:
  - Steel Structural Behaviour      - Geotechnical Techniques      - Fluid Behaviour
  - Reinforce Concrete Design      - Site Surveying      - Project Management
- ▷ Computer Science major core studies included:
  - Algorithm Complexity & Development      - Language / Compiler Implementation
  - Object-Oriented Software Design      - Artificial Intelligence

**Cherrybrook Technology High School**, Cherrybrook, NSW 2126 Jan 2006 - Dec 2012

HSC (ATAR 95.75) Subjects in:

- *English*      - *Engineering*      - *Mathematics*      - *Mathematics Ext.1*
- *Japanese*      - *Chemistry*      - *Physics*

- ▷ First in school in *Mathematics, Engineering.*
- ▷ HSC Band 6/E4 in *Mathematics, Mathematics Extension 1, Engineering, Japanese*

## WORK & EXPERIENCE

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**University of Sydney – ITAS** Apr 2016 – Present (Seasonal)

*Indigenous Tutorial Assistance Scheme Tutor*      *University of Sydney, Camperdown, Sydney*

- Help indigenous students on their studies whose in ITAS Tutor
- Academic supports for their understanding of the concepts and assignments
- Rehired throughout different semesters (*Apr – Jul 2016; May – Jul 2017; Apr 2018 - Present*)

**AECOM** Dec 2016 – Feb 2017

*Geotechnical Intern*      *138 Shatin Rural Committee Road, Hong Kong*

- Worked in a geo team that mainly focus on ELS (Excavation Lateral Support) and site monitoring
- Tasks included checking force balance/rotational moments within struts, designing different stages within an excavation, providing temporary work for structural support
- Schedule laboratory triaxial test of on-site drillholes, to obtain soil properties and site profile
- Use PLAXIS to obtain diaphragm walls forces, use SLOP/W and SEEP/W for modelling soil behaviour

- Involved in projects such as HK Metro Station Excavation, HK Airport Sub-sea Tunnel monitoring etc.

### **City University of Hong Kong**

Dec 2015 – Dec 2016

*Part-time Voluntary Research Helper*

*Tat Chee Avenue, Kowloon, Hong Kong*

- Worked remotely on research project titled *Daylighting simulation in Hong Kong Buildings*
- Used Matlab to simulate the indoor lighting profile under different structural layouts

### **Meinhardt (C&S), Hong Kong Limited**

Dec 2015 – Feb 2016

*Structural Team Trainee*

*33-35 Wong Chuk Hang Rd, Hong Kong*

- Work on amendments from building department, updates CAD files of draftings
- Modelling collision impacts, performing calculation via ETABS, SAFE etc. against building standards
- Work as a group to check calculation of safety measure; eg. connections and member capacity checking
- Create 3D models of structural interior or temporary work via software like Sketchup and Navisworks
- Been involved in projects such as Ocean Park tender, Boiler upgrades, HK airport hangar design etc.

### **University of Sydney – Club & Societies**

Mar 2013 - Nov 2017

*Voluntary uni club associate*

*University of Sydney, Camperdown, Sydney*

- Organizing, planning, and leading social activities that are targeted towards uni students
- Supervising and holding official meetings with other club executives
- Communicating with uni coordinators and professor whenever needed

### **Cherrybrook Technology High School**

Nov 2012 - Aug 2013

*Private tutor*

- Providing private tutor twice a week to high school students taking Maths & Physics
- Developing lessons & activities to teach students concepts and techniques
- Helping students improve studying skills and increase test scores

## **PERSONAL STRENGTHS**

### **Key Skills**

Critical thinking in approaching challenges  
Quick adaptation in unseen environment  
Visualise complex problem w/ abstract thinking

### **Language**

Fluent in *English, Cantonese*  
Intermediate in *Mandarin, Japanese*

## **TECHNICAL STRENGTHS**

### **Computer Languages**

C/C++, MATLAB, Java, Python, PostgreSQL, HTML, JavaScript, PHP, CSS, jQuery, Lisp, Haskell, ProLog, ANTLR4

### **Professional Applications**

Abaqus FEA, MatLab, AutoCAD, ETAB, SAFE, PLAXIS, SLOP/W, SEEP/W, Google Sketchup, Navisworks

### **General Software & Tools**

Word, Excel, PowerPoint, Publisher, iWork, L<sup>A</sup>T<sub>E</sub>X, Adobe Photoshop, Illustrator

### **Operating Systems**

Linux (Debian), Solaris, UNIX, MacOS X, Windows

### **Miscellaneous**

Software configuration management, strong verbal and written communication skills, excellent troubleshooting and debugging skills, exceptional problem solving skills