



**Qing Wang**

**Fellow & Associate Director (EPs)**

**Research School of Computer Science**

**The Australian National University**

**Webpage: <http://users.cecs.anu.edu.au/~u5170295/>**





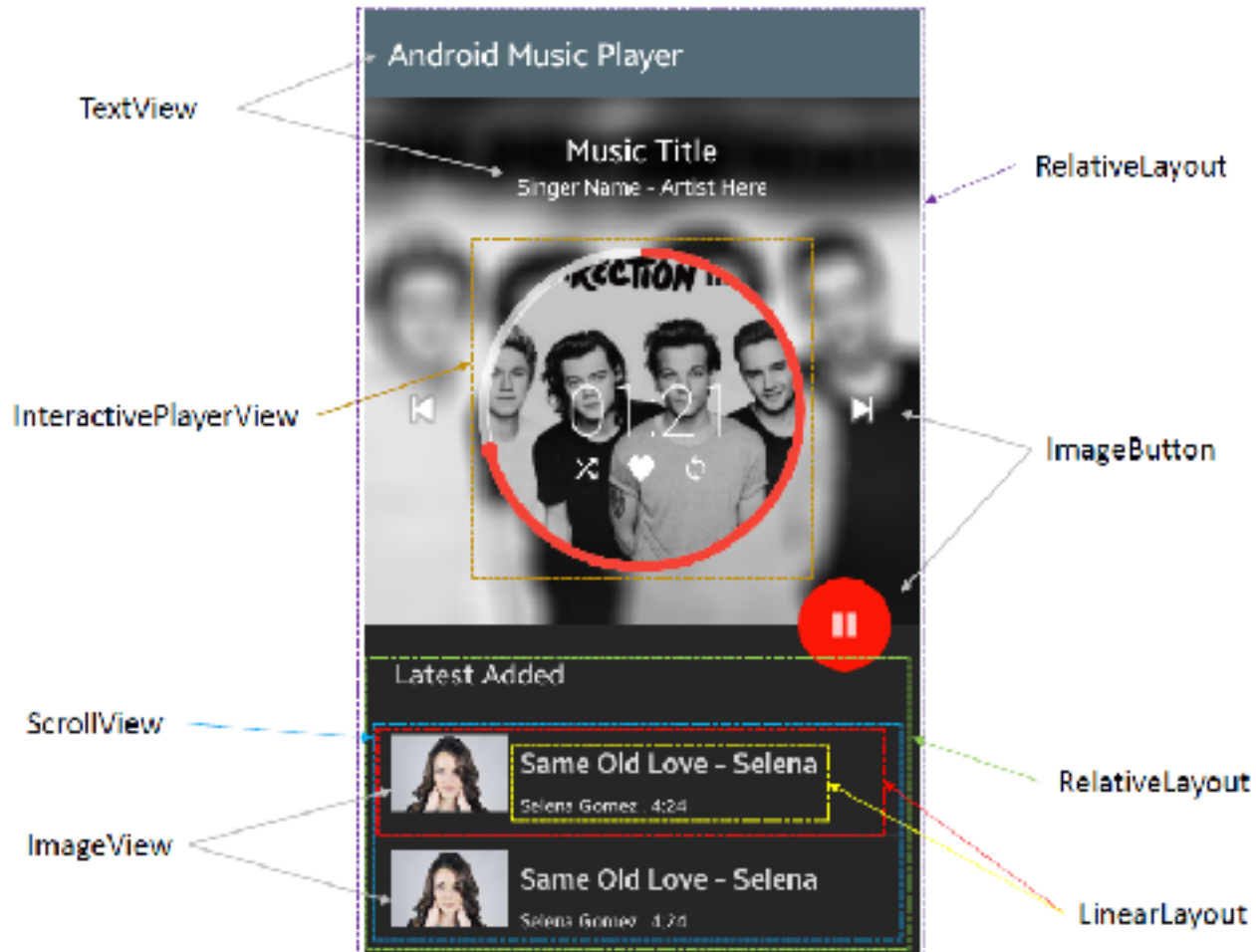
# My Life Journey





Are we happily walking towards the bright future of Code Nong (码农)?

# Will AI “Kill” Code Nong (码农)?



# Machine Learning ?= Machine Intelligence

- Panda or Gibbon?



**"panda"**

57.7% confidence

+  $\epsilon$



=



**"gibbon"**

99.3% confidence



HUMAN



ROBOT

VS

**What are our strengths and future?  
Compete or Complement?**

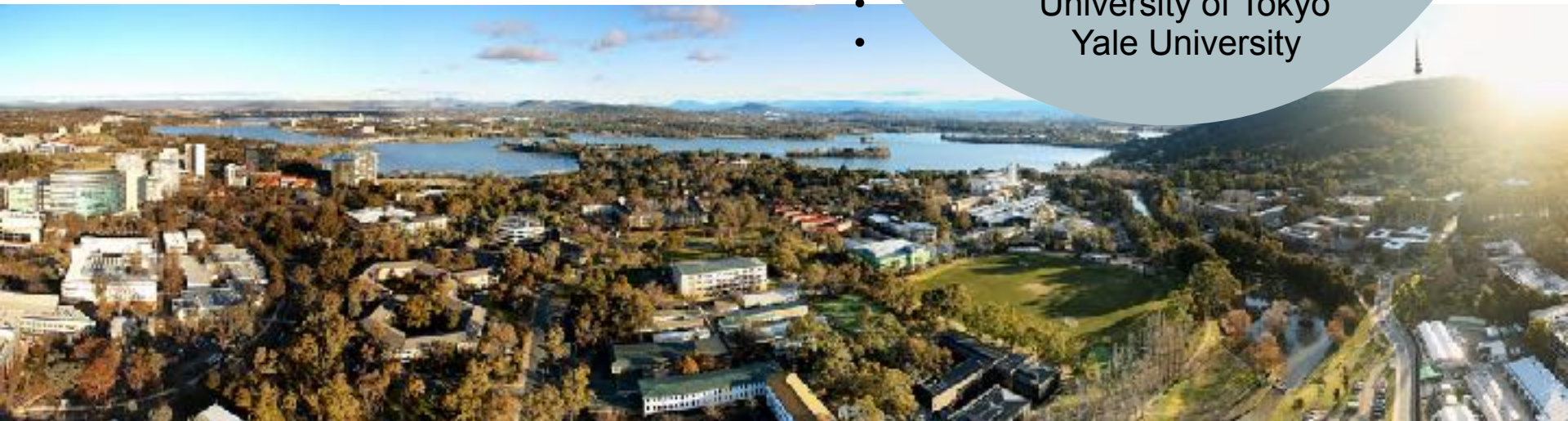
DESIGN BY CHERIF

- Established in 1946
- Only Australian university established by federal government
- Strong alliances with other organisations to increase opportunities for engagement and exchange, collaborative research and innovation



## International Alliance of Research Universities

- The Australian National University
- Peking University
- ETH Zurich
- National University of Singapore
- University of California, Berkeley
- University of Cambridge
- University of Cape town
- University of Copenhagen
- University of Oxford
- University of Tokyo
- Yale University







# #1

## #1 in Australia

ANU is ranked #1 in Australia and #20 in the world.<sup>1</sup>



## Accommodation

Guaranteed accommodation on campus.



## World's best city

Canberra ranked the world's most livable city two years in a row.<sup>2</sup>



## 'Well above' world standard

95 per cent of ANU research is rated 'above' or 'well above' world standard.

# 1:10

## 1:10 staff/student ratio

Best staff to student ratio of all Australian universities.

# 6

## Six Nobel Laureates

The highest number of all Australian universities.

<sup>1</sup> QS World University Rankings 2017/18. <sup>2</sup> OECD Better Life Index 2014.



# #1

## International outlook

Ranked first in Australia and 7th in the world for International outlook.<sup>1</sup>



## Most employable graduates

Ranked first in Australia, and 22nd in the world for Graduate Employability.<sup>2</sup>



## Innovative approach

Develop your ideas and launch your own company through our program TechLauncher.



## Accredited

Six of our undergraduate programs are professionally accredited by Engineers Australia and/or the Australian Computer Society.



## Graduate salary

Five star maximum ratings for five assessment criteria including graduate starting salary.



## Modern degrees

Offered nowhere else in Australia, our engineering programs are modern and unique.

<sup>1</sup> Times Higher Education International Outlook Indicator 2017. <sup>2</sup> 2016 Times Higher Education World University Rankings.

## ANU Student Body

### ANU - Total of 22,500 students

- 3,000 PhD
- 9,500 Postgraduates
- 10,000 Undergraduates

### Engineering & Computer Science - Total of 2,300 students

- 300 PhD
- 500 Postgraduates
- 1,500 Undergraduates
  
- 27% International
- 73% Domestic



Professor Brian Schmidt  
Vice Chancellor & President  
Nobel Prize in Physics

→ Capital of Australia

- Population ~400,000

→ Nestled in Australian bushland

→ Short drive to

- Sydney 3 hours
- Stunning beaches 2 hours
- Ski fields 2 hours



## Canberra's Key Strength

- Great study/life and work/life balance
- **Safe city to live**
- **Welcoming and multicultural city**
- Home to some of the best national cultural institutions and facilities in Australia
- **Good part time and graduate employment opportunities**
- Easy access to natural surroundings and recreational activities
- Clean environment





## Accommodation

- In 2017, about **5,000** students lived on campus; more than 20% of the student population
- **Guaranteed placement for undergraduate students\***
- Self-catered accommodation: from \$217 per week
- Catered accommodation: from \$377 per week
- No application fee; separate application for accommodation to admission: <http://www.anu.edu.au/study/accommodation>





# Vibrant Community

**20,000  
students**



**65+ social  
clubs**



**34 sport  
clubs**



**Live music**



**90%  
satisfaction**







## Engineering & Computer Science (CECS) at Australia's National University



ANU Research School of Computer Science  
Kiama Retreat September 2017



## Undergraduate Degrees at Our Faculty

### Engineering

[B. Engineering \(Honours\) \(R&D\)](#)

[B. Engineering \(Honours\)](#)

### Computer Science

[B. Advanced Computing \(R&D\)](#)

[B. Applied Data Analytics](#)

[B. Advanced Computing \(Honours\)](#)

[B. Software Engineering \(Honours\)](#)

[B. Information Technology](#)



## Bachelor of Advanced Computing (Honours)

4 year advanced degree.

Suited to students with:

- Students with a serious interest in computing at both a theoretical and practical level.
- Interdisciplinary with computing majors drawing in courses such as psychology, biology, maths, art and engineering.

### **Accreditation:**

Australian Computer Society



Read more:

[Advanced Computing](#)

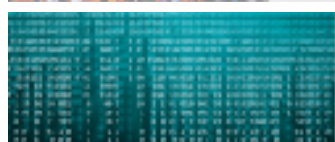
# Computing Majors and Specialisations



Intelligent Systems (Artificial Intelligence)



Systems & Architecture



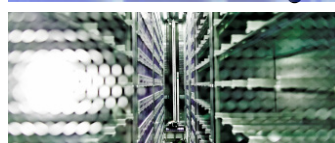
Theoretical Computer Science



Data Science



Information Systems



Software Development



Cyber Security (2018)

# Flexibility and Broad Vision



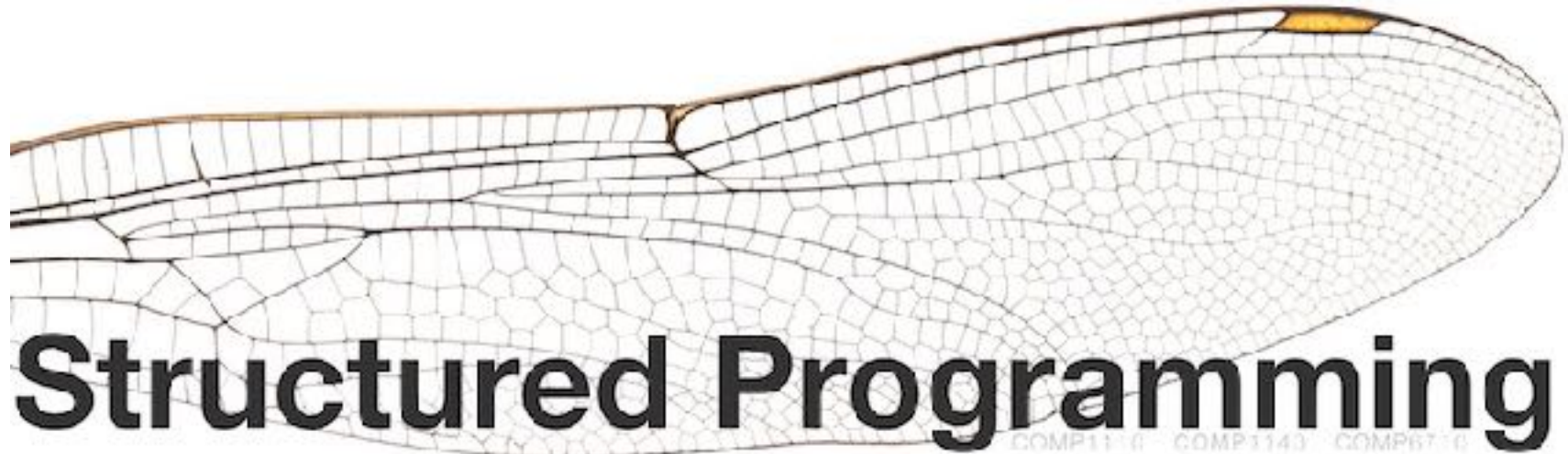
## Design Minor

- Visual communication: Design and Production
- Foundations of Creative Code
- Design Thinking: Human-Centered Design Methodologies
- Dynamic Design and Generative Systems



## Leadership and Research Minor

- Unravelling complexity
- Mobilising Research
- Creating Knowledge
- Leadership and Influence in a Complex World



Taught by Steve Blackburn,  
Professor, ACM Fellow



Learning from World-Class Researchers in  
Theory, Intelligence and System



**Launch an Idea, Launch a Start-Up,  
Launch a Career at ANU**



## Opportunities while you study

- Student projects
- Research projects
- International opportunities
- Internships
- Tech start-ups



Nick and Sebastian are developing a technology that will allow players and commercial traders to digitise their Magic: The Gathering cards...



Start-up by ANU alumnus impresses Tesla

## Global opportunities

- International Exchange
- Engineers Without Borders  
Design summits
- Enabled Futures
- Globex Program
- IARU Global Summer  
Programs



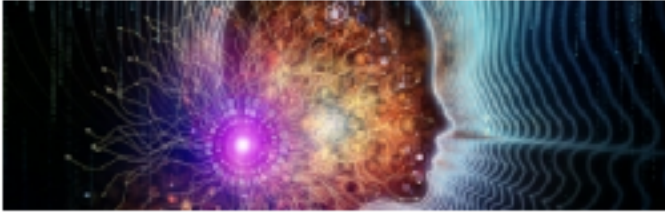
# Postgraduate Degrees at Our Faculty

Engineering	Computer Science
M. Engineering (2 yrs) in:	<b><u>M. Computing</u></b> (2 yrs) Specialisations:
- <a href="#">Mechatronics</a>	- Artificial Intelligence
- <a href="#">Photonics</a>	- Data Science
- <a href="#">Digital Systems and Telecoms</a>	- Human Centred Design and Software Development
- <a href="#">Renewable Energy</a>	M. Applied Data Analytics (1.5 yrs)



## Research

### Computer Science



#### Intelligence

- Data Mining & Matching »
- Intelligent Agents »
- Knowledge Representation & Reasoning »
- Machine Learning »
- Planning and Optimisation »



#### Systems

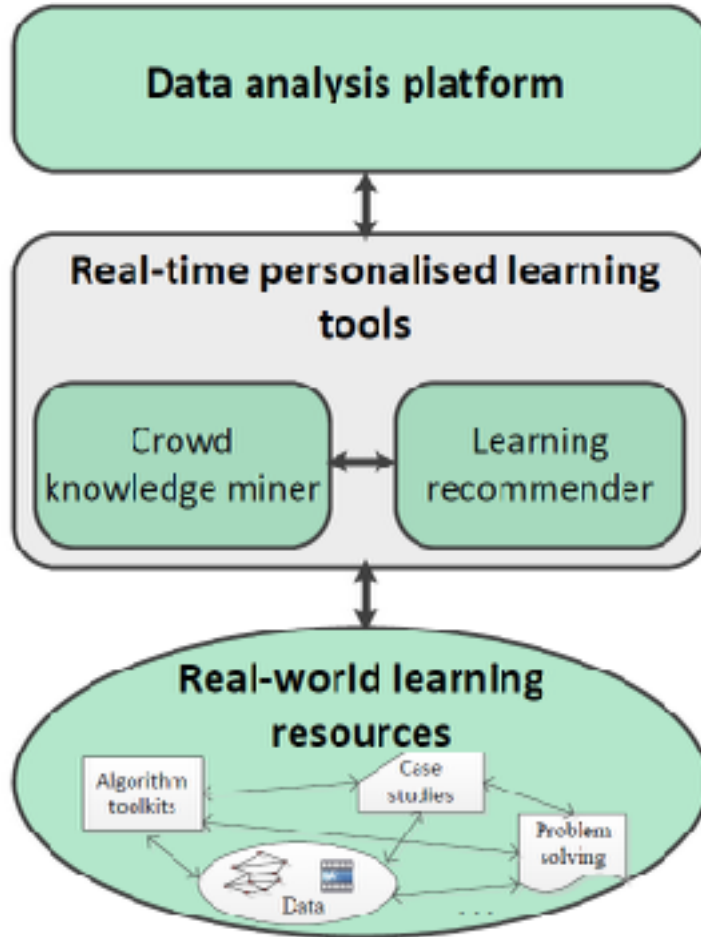
- High Performance Computing »
- Human-Centred Computing »
- Programming Languages, Design & Implementation »
- Software Engineering »



#### Theory

- Algorithms »
- Databases »
- Logic »

**World-Class  
Computing  
Research in  
Intelligence,  
System and  
Theory**



- Domain-specific knowledge graph construction
- Knowledge base and trace embedding
- Pattern-driven feedback generation



## A Knowledge Graph Driven Adaptive Learning Platform

## 2+2 Educational Partnership

- Two degrees from your home university and ANU in four years
- To learn from and work with world-class researchers
- Enhanced communication and presentation skills
- Ready for working in multi-cultural teams
- Broaden your vision and enrich your life experience

Established partnership with Chinese Universities



# Pathway to Higher Degree Research

- Qualified students can enrol in the RSCS Master program and obtain a **Master degree in 1 year**

- **Reserved PhD scholarships** for qualified 2+2 students and Master students

## Alumni – when you graduate

- Become a highly sought after ANU Graduate
- **Postgraduate work visa (2 years)**

### Companies that employ our graduates

#### Engineering

Accenture  
AECOM  
AEMO  
Airservices Australia  
Amazon  
Arup  
Aurocon  
Australian Government  
BHP Billiton  
Doering  
BP  
Brookfield Multiplex  
Energy Australia

Ericsson  
Google Inc  
Honeywell  
IBM  
KPMG  
Motorola  
Northrop Consulting  
Origin Energy  
PwC  
Telstra  
Thales Australia  
Toyota Australia  
WSP

#### Computer Science

Alcatel-Lucent  
Amazon  
Apple inc.  
BAE Systems  
CEA Technologies Pty Ltd  
Citadel Systems  
Civil Aviation Safety Authority  
Codarra Advanced Systems  
Deloitte  
Dematic  
Dolby  
Fujitsu  
Genentech

Google Inc.  
Hewlett Packard  
Huawei  
IBM  
Microsoft  
Motorola  
Nova Systems  
Oracle Corporation  
Optiver  
Seeing Machines  
Teletra  
ThoughtWorks  
Visa









83%

Full-time employed graduates say 'qualification' is important in their employment.



\$60K

Undergraduate average full-time starting salary.\*





# Lunch with RSCS Director



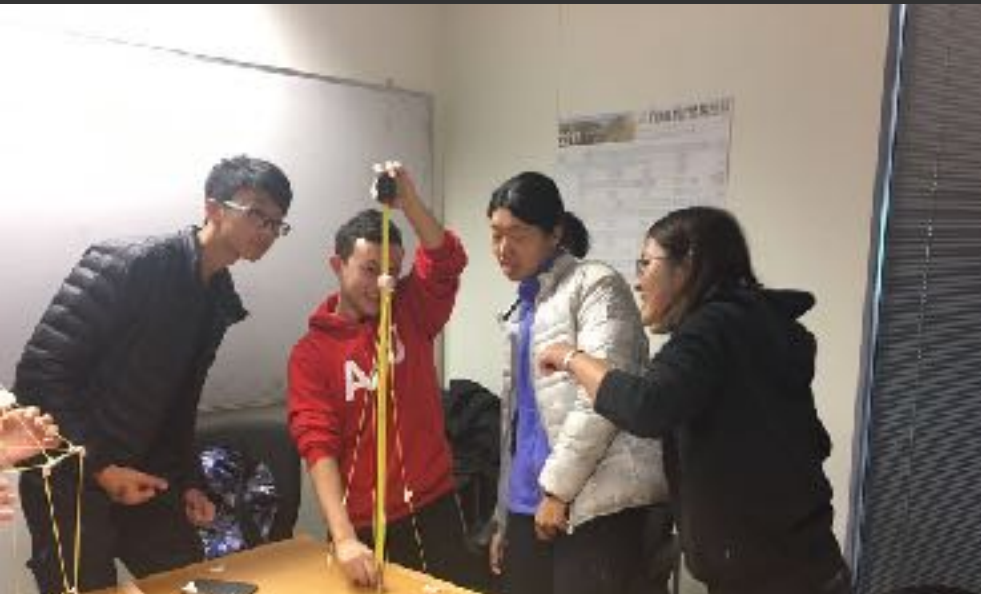
**You need to work hard, but you will be  
taken good care of!**



- Almost all the students have adapted to the study and the life at ANU
- All the students study harder than before
- Every student has learned to cook
- Many students are much fatter than before, which girls often do not want to 😊



# Study Tour Feedbacks



**Courses are full of examples, vivid and attractive**



# CECS 2018 Winter School



- Date: 15/07/2018 – 28/07/2018
- Cost: Airfare + visa fee + 2500 AUD
- Mix of academic and social activities
- 2 free days to explore Canberra (or Sydney) at your own expense

**Experience ANU, Canberra and Australia in person**

SINGLE DEGREE

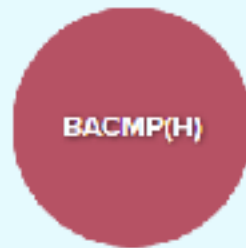
Academic Year 2018 ▾

 ENQUIRE NOW

 APPLY 

## Bachelor of Advanced Computing (Honours)

A single four year undergraduate degree offered by the **ANU College of Engineering and Computer Science**



Overview

Admission & Fees

Study

First Year Advice


This is a unique, interdisciplinary program that will prepare you to be a future leader of the information and communications technology revolution.

As a degree accredited by the Australian Computer Society you will


 LENGTH 4 year full-time

 MINIMUM 192 Units


### ADMISSION REQUIREMENTS


 ATAR 90

 OLD 6

 IB 33

Which applies to me?

 Prerequisites

 Bonus point availability

### ACADEMIC PLAN

AACOM

### FIELD OF EDUCATION

Information Technology

### CRICOS CODE

077939A

### UAC CODE

135705 (B Advanced)

Best website to view more about your degree, specialisation, minor, courses etcetera

<http://programsandcourses.anu.edu.au/>



# More Program Information



Engineering and Computer Science  
Undergraduate Degrees 2017



Australian National University 2017  
Undergraduate Student Guide



Postgraduate Research Higher Degree  
Research Programs



Australian National University 2017  
Postgraduate Coursework Programs

<https://cecs.anu.edu.au/study/more-information/student-guides>

# ANU English Language Requirements

- **IELTS 6.5:** minimum 6.0 in each band \*
- **TOEFL IBT 80:** minimum 20 in Reading and Writing and 18 in Speaking and Listening \*
- Meeting English language requirements using other evidence or means as stated in the 'ANU English Language Admission Requirement for Students Policy' : [https://policies.anu.edu.au/ppl/document/ANUP\\_000408](https://policies.anu.edu.au/ppl/document/ANUP_000408)
- If you don't meet English you can attend the ANU College for English courses from a few weeks up to a few months.

# Want more information?

ANU College of Engineering & Computer Science

T: +61 2 6125 6512

WeChat ID: ANU\_CECS

E: [international.cecs@cecs.anu.edu.au](mailto:international.cecs@cecs.anu.edu.au)

W: <http://cecs.anu.edu.au>