Come and Join Us At
UQ Cyber Security

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Chair and Director, UQ Cyber Security

https://cyber.uq.edu.au

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AUSTRALIA

A quick poll

- Any UQ alumni here?

- How many of you are from:
  - The government?
  - Industry?
  - Universities?
  - TAFE colleges?
  - Others? Where are you from?

- Who hires cyber security professionals?
- What are the common challenges you face for each hiring process?
- What type of jobs do you recruit for?
- Does your HR advertise appropriately?

- What is your biggest worry for the workforce as a member of the cyber security sector?

AustCyber's
Australia Cyber Security Sector Competitiveness Plan (1/3)

The Australian cyber security workforce is large and increasingly diverse…

- Currently around 19,500 cyber security professionals in Australia, across a wide range of different jobs.

- Using the US NICE Cybersecurity Workforce Framework, these roles can be grouped into 7 categories, ranging from cyber investigation (~2%) to operation and maintenance of IT security systems (~21%).

- A growing number of these roles are **non-technical and require multidisciplinary skills from law, communications and psychology.**

AustCyber's
Australia Cyber Security Sector Competitiveness Plan (2/3)

…but the skills shortage in the Australian cyber security sector is real and more severe than previously thought.

- The sector may be short of 2,300 workers today, costing more than $400 million in lost revenues and wages.

- With strong demand forecasts, the pressure is unlikely to ease soon.

- The latest assessment indicates **Australia may need up to 17,600 additional cyber security workers by 2026 to fill this gap and enable the sector to meet its potential.**

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AustCyber's
Australia Cyber Security Sector Competitiveness Plan (3/3)

The education system is responding effectively…

- More than half of Australia's universities offer cyber security qualifications, and many others teach cyber courses.

- TAFE colleges across the country are launching new standardised cyber security programs. Graduate numbers are rising and could reach around 2,000 annually by 2026.

…however, serious risks could slow this mobilisation.

- Many universities and TAFEs are struggling to compete with the private sector to attract and retain teaching staff.

- **New cyber security courses should be industry-focused and include opportunities for work-integrated learning, such as apprenticeships, to truly prepare students for jobs.**

If these risks can be addressed, the long-term outlook is encouraging.

UQ's Response

Creating Change through the UQ Cyber Security Initiative

UQ CYBER SECURITY

INDUSTRY

AusCERT
and members

UQ ITS

Industry, Governments &
International Organisations

ACADEMIC RESEARCH

EAIT (ITEE)

Science (Maths & Physics)

HASS

BEL

Medicine

Centre for Policy Futures

Inst for Social Science Research

AusCERT Research

EDUCATION & TRAINING

CPD Courses

Bachelor Computer
Science
(Cyber Security Major)

Interdisciplinary
Master of Cyber Security
(In Development)

PhD

CRICOS code 00025B

UQ Cyber Security

- A centre for comprehensive, cross-institution cyber security research and education

- Led by Prof Ryan Ko, as Chair and Director of UQ Cyber Security

- History: AusCERT was established in 1992 at UQ, as the second Computer Emergency Response Team (CERT) in the world, after Carnegie Mellon University's CERT.

- In 2017, the university launched the UQ Cyber Security Initiative, bringing together more than 40 academics and practitioners, covering the breadth of UQ's discipline coverage makes it one of the few institutions able to offer consolidated expertise across:
  - Engineering and ICT,
  - Mathematical and physics fundamentals,
  - Incident response (AusCERT),
  - Policy and national security studies
  - Social dimensions though law, business, criminology, and social sciences.

- Together with its partners, UQ will develop the top graduates and industry leaders in the cyber security sector.

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Our Interdisciplinary Research

Secure quantum communications

Secure communications for space

Cyber autonomy and automation

IoT and cyber physical security

Data privacy and user data control

Cyber law and ethics

Secure software engineering

National security and cyber policies

Cyber criminology

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Our researchers partner with: (sample list)

- Australian federal and state government agencies, industry partners

- International organisations and multinational companies

- Leading Asia Pacific cyber security groups and CERTs

- ARC Centres of excellence and leading overseas institutes

- Energy sector stakeholders

- And >500 corporate members of UQ's AusCERT

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Education and Outreach

Undergraduate Degree

- Students can undertake a dedicated cyber security major within the Bachelor of Computer Science
- This program focuses on secure programming techniques and ethical hacking to safeguard individuals, business and governments against cybercrime.

Postgraduate Degrees

- Students can specialize in cyber security in cyber defence, cryptography, cyber criminology, and cyber security leadership
- There are several entry/exit options:
  - Master of Cyber Security
  - Postgraduate Diploma of Cyber Security
  - Postgraduate Certificate of Cyber Security
- Students can also pursue Higher Degrees by Research, including PhD and MPhil degrees.

Continuous Professional Development & Executive Education

- Professionals can take our wide range of executive education courses and workshops run by global experts and AusCERT.

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Adding Value to Industry: Recent Events

24 May 2019

Secure Coding and Automated Assessment Tools Workshop

The "father of fuzzing", Prof. Barton Miller (UW-Madison) delivered his Secure Coding and Automated Assessment Tools workshop for the first time in Australia.

28-31 May 2019

The **18th AusCERT Conference:**
https://conference.auscert.org.au
(Australia's oldest cyber security conference)

#uqcyber

Validation with Industry

We are continuously validating our degree with our industry partners and global experts, to address gaps and opportunities for Australia pointed out by AustCyber's Sector Competitiveness Plan.

The AusCERT Conference has allowed us to reach out to a wide range of cyber security stakeholders, like you!

It is our goal to let this become the model for current and future degrees offered around the world.

Interested in Joining Us?

- Mentors (You!)

- Distinguished Speakers

- Guest Lecturers

- Adjunct Lecturers and Professors

- Industry Partners
  - Internships
  - Research

- Giving back: Sponsor a future student?

- Validate our programme and offer us feedback, because we want to make a difference with your support.

Thank you

Please contact:

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Join us at UQ Cyber Security!
Open positions for PhD, Postdocs, visiting and continuing academic positions across all faculties.
Chat with us at our booth to find out more.