

Dr Chris Gaskett

PhD (systems engineering),
BE (comp. sys. eng.), BAppSci (comp. sci.), PMP

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I'm an experienced software developer and researcher. My background includes technical lead and senior software engineer roles; leading R&D as an active developer; university lecturing in software; and industrial research in Japan. I have published papers across specialties including machine learning, machine vision, and robotics. I've recently worked on applied cryptography and use of a distributed NoSQL DBMS. I'm available for onsite, hybrid and remote positions.

SKILLS SUMMARY

- Current software development in Java (Spring) with earlier work in many other languages
- Cryptography (including post-quantum), machine learning, image processing, robotics
- Research skills including discovering and comparing prior work, developing novel solutions, experimental design, statistical analysis, reporting results.
- Project management including including agile/iterative approaches (certified project manager)
- Communication skills including writing for various audiences, public speaking, discussing technical issues with lay-people, and media liaison
- Teaching, including curriculum development, coordinating delivery of subjects.

PROFESSIONAL EMPLOYMENT

**Head of Research and Development, CoolRock Software,
Melbourne Australia**

April 2007-Mar 2022

(Previously Technical Lead, Senior Software Engineer)

- Research and development on cryptography (including post-quantum). FIPS compliance.
- High speed indexing and search using a distributed NoSQL DBMS. AWS/Azure deployment
- Extensive Java (Spring Boot) development with earlier work in c++, c#, and ANTLR
- Mobile App development in c#
- Project management and service management for internal and customer deployment projects from startup company to enterprise product vendor

**Lecturer (permanent), School of Maths, Physics and Information Technology,
James Cook University, Cairns, Australia**

Feb 2004-Mar 2007

- Lecturing in project management, c++, unix, and database systems
- Development and coordination for project management subjects. Developed an industry projects scheme for students and received a national award (Carrick Citation) for outstanding contributions to student learning.
- Managed project subject delivery across Cairns, Townsville, Sydney, and Singapore campuses

- Coordinated student supervision by lecturers in Cairns to support student projects
- Carried out on-site review of School of IT organisation and lecturing at the Singapore campus

**Research Engineer, Department of Humanoid Robotics and Computational Neuroscience,
Advanced Telecommunications Research Institute International (ATR International),
Kyoto, Japan Jul 2002-Feb 2004**

- Research on reaching strategies for a humanoid robot with active stereo vision
- Distributed system development in C++ and Scheme under MS Windows and VxWorks (real-time OS), learning system implementation.

**Associate Researcher, Active Safety Laboratory,
Toyota Central Research and Development Laboratories, Nagoya, Japan Jul 2001-Jun 2002**

- Research on identifying road regions through stereo vision
- Post processing of human gaze direction data from seeingmachines FaceLAB

Other experience: Retail, CFA volunteer, parkrun volunteer, AEC polling official.

EDUCATION

PhD in Systems Engineering, “Q-Learning for Robot Control” 1998–2002

Supervisor: Professor Alexander Zelinsky,
Systems Engineering, The Australian National University (ANU), Canberra
Development of a control system for using reinforcement learning
Electronics design for the Kambara autonomous underwater vehicle
Development in Java, C++ under MS Windows, Unix, VxWorks

Bachelor Degree in Computer Systems Engineering 1993–1997

with first-class honours, Royal Melbourne Institute of
Technology University (RMITU)
Fault trees and FMEA for fault finding (VDO instruments)

Bachelor Degree in Computer Science 1993–1997

with distinction, RMITU, Melbourne
Speaker independent speech recognition using neural networks

Awards: Kernot Medal: RMITU engineering faculty award for best final year engineering student, across all disciplines at RMITU, Double Degree Fifth Year Prize, ENGenius Display Award, RS Components Award, KRONE Australia Prize.

SELECTED PUBLICATIONS

- **Hand-Eye Coordination through Endpoint Closed-Loop and Learned Endpoint Open-Loop Visual Servo Control**, Chris Gaskett, Ales Ude, and Gordon Cheng, *The International Journal of Humanoid Robotics*, Vol 2, No 2, 2005 pp. 203-224
- **Online Learning of a Motor Map for Humanoid Robot Reaching**, Chris Gaskett and Gordon Cheng, *Proceedings of the 2nd International Conference on Computational Intelligence, Robotics and Autonomous Systems (CIRAS 2003)*, (Singapore, December 2003)

- **Reinforcement Learning Under Circumstances Beyond its Control**, Chris Gaskett, *Proceedings of the International Conference on Computational Intelligence for Modelling Control and Automation (CIMCA2003)*, (Vienna, Austria, February 2003)
- **Japanese Patent: 視線座標変換方法、そのプログラムおよびそれを記録した記録媒体 (Gaze coordinate transformation method)** by Chris Gaskett, 2002.
- **Q-Learning for Robot Control**, Chris Gaskett, *PhD thesis from the Robotic Systems Laboratory, part of the Research School of Information Sciences and Engineering at the Australian National University*.
- **Learning Implicit Models during Target Pursuit**, Chris Gaskett, Peter Brown, Gordon Cheng and Alex Zelinsky, *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA2003)*, (Taiwan, May 2003).
- **Reinforcement Learning for a Vision Based Mobile Robot**, Chris Gaskett, Luke Fletcher, and Alex Zelinsky, *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2000)* (Takamatsu, Japan, October 2000).
- **Q-Learning in Continuous State and Action Spaces**, Chris Gaskett, David Wettergreen, and Alex Zelinsky, *Proceedings of the 12th Australian Joint Conference on Artificial Intelligence* © Springer-Verlag (Sydney Australia, 1999).
- **Reinforcement Learning applied to the control of an Autonomous Underwater Vehicle**, Chris Gaskett, David Wettergreen, and Alex Zelinsky, *Proceedings of Australian Conference on Robotics and Automation* (Brisbane, Australia, March 1999).