

Michael Thoreau

Email: michael@thoreau.com.au
Phone: (+61) 0409989556

Address: 63 Mitre st, St Lucia, 4067
QLD, Australia

I am a recently graduated engineer, currently involved in robotic perception and computer vision research using machine learning. I have a strong interest in the application of machine learning and robotics in the aerospace and logistics industries.

EXPERIENCE

Research Engineer

July 2017 – Present

Commonwealth Scientific and Industrial Research Organisation (CSIRO) - Brisbane, Australia

- Technical lead on an external R&D project with a large aerospace company.
- Development of an application specific, machine learning driven, object detection system with advantages over the state of the art.
- Development of novel techniques for multiple object tracking; authoring of a paper submitted to ACCV2018 on learnt pedestrian re-identification.
- Overseas travel for field testing and customer engagement.
- Co-Supervision of undergraduate students.

Tutor

March 2016 – July 2016

The University of Queensland - Brisbane, Australia

- CSSE3010 – Embedded Systems Design and Interfacing.
- The role of tutor includes teaching and assessing both high level content and technical details of practicals and projects, as well as supporting course content.

Hardware Engineer

February 2016 – August 2016

Commonwealth Scientific and Industrial Research Organisation (CSIRO) - Brisbane, Australia

- Continued development work on undergraduate thesis topic, while adapting designs for integration into a wider CSIRO project.
- Mechanical design for 3D printing (SolidWorks).
- Design of high sensitivity, low noise, and high-speed electronics.
- Drafted a research paper; Acoustic Sensing for mobile robots.

Contracting Engineer

February 2016 – July 2016

Self Employed - Brisbane, Australia

- Analysis of long range communications networks for industrial sensing (One-Wire).
- Consulting on a change to communications, with worldwide deployment by parent company.

Industrial Trainee – Thesis Student

August 2015 – February 2016

Commonwealth Scientific and Industrial Research Organisation (CSIRO) - Brisbane, Australia

- FPGA based acoustic signal processing research.
- Significant hardware development, multiple successful PCB runs.
- Development of simulations for system verification.
- Development of Linux drivers for peripheral interfacing.

Mechatronic Engineer

June 2014 (one-week)

Swarm Farm Robotic Agriculture - Emerald, Australia

- Developing/Debugging control systems for full scale agricultural robots.
- Designing safety procedures.

EDUCATION

Technical University of Munich - Munich, Germany
Bachelor of Engineering – Exchange Semester

September 2016 – March 2017

The University of Queensland – Brisbane, Australia
Bachelor of Engineering(Hons) - Electrical and Computer engineering

March 2012 – November 2017

The University of Queensland – Brisbane, Australia
Bachelor of Science - Computer Science

March 2012 – November 2017

Current Interests/Research Areas

Machine Learning

- Deep learning for computer vision tasks.
- Deep representation learning for robotics.
- Supervised and un-supervised learning for medical diagnostics.

Embedded systems

- Dependable / provable systems.
- Control and signal processing on constrained systems.
- Machine learning on constrained systems.

Technical Skills

Programming Languages

- Matlab, Python, C (strong), Ada, VHDL, Java, expecting to learn C++ when required.
- Experience with TensorFlow, defining and training new models.

Hardware design

- Mixed signal electronics.
- Dense Multi-Layer PCB layout and design.
- Mechanical design for 3D printing (SolidWorks).

Documentation

- LaTeX, Word, Powerpoint, Confluence, Git

Languages

English – C2, German – B1

Other

Australian Cyber-Security Challenge

- A competitive, 24hr, offensive computer security challenge with aspects of reverse engineering, web security and penetration testing.
- Ranked 16th out of 64 teams in Australia (1st in state).

European Student Earth Orbiter Project – TuM ground station segment

- Complete design, implementation, and testing of ground station control software.
- Software in use for further project development.

Personal

Skiing, Cycling, Photography

REFERENCES – Unless given separately

Dr. Navinda Kottege, SMIEEE
Senior Research Scientist
Robotics and Autonomous Systems Group,
Data61, CSIRO
1 Technology Court
Pullenvale QLD 4069
Australia

E: navinda.kottege@csiro.au
T: +61 7 3327 4024

Andrew Bates
Founding Director, CEO
Swarm Farm Robotic Agriculture.
Emerald, Queensland

E: andrew@swarmfarm.com
T: +61 428 186 371