

MICHAEL THOREAU

New York City, NY, USA

michael@thoreau.com.au

michaelthoreau.github.io

EDUCATION

New York University

Master of Electrical and Electronics Engineering

Class of 2021

The University of Queensland

Bachelor of Computer Engineering and Electrical Engineering

Bachelor of Computer Science

Graduated Dec 2017

The Technical University of Munich

Exchange Semester

Winter Semester 2016

PRACTICAL SKILLS AND TOOLS

Software Engineering

Python, C, C++, MATLAB, Ada

ML and CV

Tensorflow, PyTorch, OpenCV

Design and Simulation

Solidworks, Autodesk, PCB Design Tools

Specialised Operating Systems

ROS, FreeRTOS

EXPERIENCE

New York University

Teaching Assistant - Graduate Real Time Embedded Systems

September 2020 - Present

- In-class demonstrations, course content creation, grading assignments/projects (C, ASM).

CSIRO

Engineer, Research

July 2017 - January 2020

- Self-Supervised learning research (PyTorch, Python, High-Performance Clusters).
- Development of novel high accuracy pedestrian counting systems (Machine Learning, Tensorflow, Object Tracking, Pedestrian Re-ID).
- Generating obstacle maps from 3D LiDAR (ROS, Point Cloud Processing).
- Development of a distributed 3D vision system, real-time processing with 60 cameras (C++, Computer Vision, Docker).

The University of Queensland

Tutor - Embedded Systems

March 2016 - July 2016

- Demonstrating, teaching, adding content to course materials (C, FreeRTOS).

CSIRO

Honours Thesis Student and Intern

July 2015 - August 2016

- Development of high-performance microphone array hardware for robotics (PCB Design, Mixed Signal Instrumentation).
- Development of FPGA based beamforming for Angle of Arrival Estimation (VHDL, Linux Drivers).

SwarmFarm - Robotic Agriculture Startup

Mechatronics Placement

June 2014

- Short placement, tracking control for a rear-wheel steering robot.

PUBLICATIONS

Deep Similarity Metric Learning for Real-Time Pedestrian Tracking
George Floyd Protests - Video Credit

ACRA 2019
The New York Times

HIGHLIGHTED COURSES

Course (institution)	Grade (A-F equivalent)
Honours Thesis (UQ, CSIRO)	A
Machine Learning (NYU)	A
Satellite Communication Lab (TuM)	1+ (A)
Control Engineering 1 (UQ)	A
Real-Time Programming Languages (TuM)	1.7 (A)
Computational Physics (UQ)	A
Advanced Embedded Systems (UQ)	A

OTHER

Search for Kiwi the missing paraglider

- Main Data Science Person.
- First ever (as far as I know) crowd-sourced Search and Rescue mission with satellite data.
- 500 volunteers searched 15,000 sq km of high-resolution imagery over two weeks.

NYU Rogue Aerospace - NASA Competition

- Electronics Lead.
- Apogee control drag system design.

European Student Earth Orbiter Project - TuM ground station

- Design, implementation, and testing of ground station vertical axis control software.
- Satellite successfully launched aboard a SpaceX Falcon 9 rocket, Dec 2018.

5kV high-energy plasma thruster experiment power supply

- Project with a friend at the International Space University (Strasbourg, France).
- Electronics Design.

Australian Cyber-Security Challenge

- A competitive, 24hr, offensive computer security challenge with aspects of reverse engineering, web security, and penetration testing.
- Ranked 1st in state.

Other Interests

- Photography, Hiking, Skiing, Student Pilot, Tinkering, Everything Outdoors.