

MICHAEL THOREAU

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EDUCATION

New York University

Class of 2021

Master of Electrical and Electronics Engineering

The University of Queensland

Graduated Dec 2017

Bachelor of Computer Engineering and Electrical Engineering

Bachelor of Computer Science

The Technical University of Munich

Winter Semester 2016

Exchange Semester

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

September 2020 - Present

Graduate Teaching Assistant - Real Time Embedded Systems

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

CSIRO

July 2017 - January 2020

Engineer, Research

- 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

March 2016 - July 2016

Tutor - Embedded Systems

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

CSIRO

July 2015 - August 2016

Honours Thesis Student and Intern

- 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

June 2014

Mechatronics Placement

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

PUBLICATIONS

Deep Similarity Metric Learning for Real-Time Pedestrian Tracking

ACRA 2019

FAVOURITE 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

Paraglider Missing in Nevada - Crowd Sourced Search Effort

- Rapid development of a pipeline for 500 volunteers searching 15,000 sq km of high-res satellite data in 2 weeks.
- First ever (I think) crowd-sourced Search and Rescue mission with satellite data.
- Full dataset of 35k images publicly available for future research.

NYU Rogue Aerospace - NASA Competition

- Electronics Lead.
- Apogee control 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 pulsed plasma thruster experiment

- Project with the International Space University (Strasbourg, France).
- Electronics Design, energy source.

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, Everything Outdoors.