

# MICHAEL THOREAU

New York City, NY, USA

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michaelthoreau.github.io

## EDUCATION

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### 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

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### 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

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### NYU Langone - Centre for Biomedical Imaging

January 2021 - Present

*Masters Thesis Student*

- Accelerated MRI Reconstruction with Deep Learning.

### 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).

## 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.