

Thomas Scherlis

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Exploring Robotics and ECE at Carnegie Mellon University

EDUCATION

CARNEGIE MELLON UNIVERSITY

• ELECTRICAL AND COMPUTER ENGINEERING

• ADDITIONAL MAJOR IN ROBOTICS

GPA: 3.89

Expected May 2021 | Pittsburgh, PA
Carnegie Institute of Technology

SHADY SIDE ACADEMY

Grad. Jun 2017 | Pittsburgh, PA

Cum. GPA: 3.99/4.33

LINKS

Github:// [Toms42](#)

YouTube:// [Tom Scherlis](#)

LinkedIn:// [Tom Scherlis](#)

Portfolio: <http://tomscherlis.com>

COURSEWORK

- Introduction to Electrical and Computer Engineering
- Principles of Imperative Computation
- Calculus in Three Dimensions
- Structure and Design of Digital Systems
- Advanced Mobile Robot Design
- Concepts of Mathematics
- **TA:** Principles of Imperative Computation

SKILLS

INTERESTS

Embedded Systems • Robotics • Software Engineering

PROGRAMMING

Experienced: C • Java

Proficient: C++ • Verilog/Systemverilog

Familiar: Python

COMPUTING HARDWARE

PCB design and layout • Texas Instruments Hercules • Atmel AVR Chips • FPGA

DEVELOPMENT TOOLS

Qt • FreeRTOS • Linux/Unix Systems • Git • SVN

DESIGN TOOLS

Solidworks • Altium Designer

EXPERIENCE

CMU PLANETARY ROBOTICS LAB | LUNAR ROVER AVIONICS TEAM

Spring/Summer 2018

- Developed safe, event-driven software for a NASA-funded lunar rover in C for FreeRTOS.
- Led development of a custom Qt-based operator interface GUI in C++ for remote command and telemetry.
- Created two preliminary development boards featuring an FPGA and Microprocessor.

LEAP@CMU | ROBOTICS TEACHING ASSISTANT

Summers 2015, 2016, 2017

- Taught groups of 10-20 High School Students introductory and advanced programming and robotics concepts, including lectures on C++, OpenCV, and CAD.
- Culminates in a final Arduino-based project, such as soccer playing robots, Rubik's Cube Solver, CNC plotter, and a piano playing robot.

PROJECTS

SUBMERSIBLE ROV | tomscherlis.com/otw-portfolio/blackwidow/

- Project Lead
- Low-cost custom robotic submersible, featuring headlights, 3-axis thrusters, and live video telemetry.
- Featured a custom PCB and firmware based on an ATmega328.
- Controlled over an ethernet tether by a custom java-based operator interface.

GPU LBM SIMULATOR | tomscherlis.com/otw-portfolio/lbm/

- GPU-accelerated Lattice-Boltzmann fluid simulator.
- High speed virtual wind tunnel utilizing CUDA C and OpenGL.

EMULATED RISC-V CPU | tomscherlis.com/otw-portfolio/risc-v-cpu/

- RISC-V spec CPU emulated in Logisim.
- Features a custom mini-kernel for keyboard and timer interrupt servicing.

CLUBS AND ACTIVITIES:

CARNEGIE MELLON RACING (CMR) | LOW-VOLTAGE SYSTEMS CAPTAIN

ROCKETRY CLUB | CERTIFICATION DIRECTOR

DRONE RACING CLUB

FIRST TECH CHALLENGE (HIGH SCHOOL) | TEAM CAPTAIN

AWARDS

2018	CMU Build18 Hackathon	Faculty Choice and Builder's Choice awards
2017	Shady Side Academy	Computer Science Award
2017	Shady Side Academy	Symphonic Band Award
2017	Shady Side Academy	Good Citizen Award
2017	PicoCTF	158th of 12,567 teams