

Thomas Scherlis

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EDUCATION

CARNEGIE MELLON UNIVERSITY

Carnegie Institute of Technology
• Electrical and Computer Engineering
• Additional Major in Robotics
Expected May 2021 | Pittsburgh, PA
GPA: 3.89

LINKS

Portfolio: <http://tomscherlis.com>
LinkedIn:// Tom Scherlis
Github:// Toms42

COURSEWORK

Current:

- Introduction to Computer Systems
- Signals and Systems
- Mathematical Foundations of Electrical and Computer Engineering

Past:

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

TEACHING ASSISTANT

- Structure and Design of Digital Systems: Fall 2018
- Principles of Imperative Computation: Summer 2018

SKILLS

PROGRAMMING

Experienced: C • Java • C++
Proficient: SystemVerilog • Python

COMPUTING HARDWARE

PCB design and layout • TI and Atmel Microcontrollers • Intel FPGA

DEVELOPMENT TOOLS

Qt • FreeRTOS • Altium Designer
• Solidworks • Linux/Unix Systems
• Git • SVN

EXPERIENCE

CMU PLANETARY ROBOTICS LAB | CubeRover Avionics Team Spring/Summer 2018

- Developed a safe, event-driven embedded flight-software system for a NASA-funded lunar rover using C and FreeRTOS.
- Led development of a custom operator interface GUI using C++ and Qt for remote command and telemetry.
- Developed two printed circuit boards featuring an FPGA and a microprocessor.
- The rover is an ultra-small, low-cost platform designed with automotive electronics for commercial lunar missions.

LEAP@CMU | Robotics Teaching Assistant Summers 2015, 2016, 2017

- Taught groups of 10-20 High School Students programming and robotics concepts, including 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

FULL-BODY VR FLIGHT SIMULATOR | tomscherlis.com/quidditch

- Virtual reality "Quidditch" game with full-body tilt-to-steer controls.
- Created procedural real-time terrain generation using Unity 3D.
- Winner of Faculty Choice and Builder's Choice awards at the 2018 CMU Build18 Hackathon.

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

- CPU with RTL datapath and control unit emulated in Logisim
- Adheres to RISC-V specifications

REAL-TIME FLUID SIMULATOR | tomscherlis.com/lbm

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

ACTIVITIES:

CARNEGIE MELLON RACING (CMR) | Low-voltage systems captain

- Create a formula-one style electric racecar each year to compete in the international FSAE competition.
- 2018 system lead for the low-voltage electrical system, which includes over 6 custom control boards.
- Created a live telemetry viewer using C++ and Qt to display real-time vehicle dynamics.

ROCKETRY CLUB | High Power Certification Director

INTERESTS: Robotics • Embedded Systems • Software Engineering
• Photography • Drone Racing Club

AWARDS

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