Oliver Pranis

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EDUCATION

California Institute of Technology   Pasadena, California
Bachelor of Science in Electrical Engineering   GPA: 4.0   Expected June, 2024

PROJECTS

8-bit CPU design using a Hardware Description Lanuage   January - March 2022
- Design of Control Unit, ALU, Data and Program Memory Access Units.
- Implementation and testing on a CPLD using ABEL hardware description language.

Embedded System design on an AVR microcontroller using Assembly   March - June 2022
- Implementation of the Binario game.
- Serial communication, main game loop with interrupts and timers, user interface routines.
- Assembly language programming and debugging.

Analog synthesizer design   March - June 2022
- voltage-controlled oscillator design.
- exploring various analog filter designs.
- SPICE simulation, use of oscilloscopes, signal generators.

SKILLS

Electrical Engineering: VHDL, LTspice, Altium.
Programming: Python, Java, C, C++, Assembly, JavaScript, MATLAB, PHP, SQL.

WORK EXPERIENCE

Axonics   Irvine, CA
Electrical Engineering Intern   June - August 2022
- Testing custom test fixture systems used in validation and design of Implantable Pulse Generators.
- Designing software for test fixture data analysis.

RESEARCH

Multiwavelength Coupling with Waveguide-Integrated Optical Metasurfaces   July, 2021 − September, 2021
Atwater Research Group, California Institute of Technology   Pasadena, California
- Passive single-wavelength, and switchable multi-wavelength metasurface design.
- Experimental charazterization in FDTD Lumerical simulations.

Fabrication of Single Cadmium Sulfide Nanowire Photodetectors and the Assessment of their Photodetecting Capabilities   September, 2018 − April, 2019
Institute of Solid State Physics, University of Latvia   Riga, Latvia
- Synthesis of CdS nanowires using vapour-liquid-solid method.
- Creation of a light-sensing detector from the nanowires and its photoelectric property characterization.
Gold diploma in the Students' Scientific Conference of Riga, Bronze diploma in National Students' Scientific Conference. Chosen to represent Latvia at MILSET ESI international conference in Abu Dhabi.

LEADERSHIP

Clubs:
- Caltech Robotics Team - Electric subteam (signal processing, circuit design, SPICE simulation).

Teaching Assistantships:
- Electronic system prototyping class (designing, constructing and testing a system from a schematic to a soldered prototype).
- Introduction to Programming Methods class (fundamental data structures and algorithms).

INTERESTS

- Game development in a team using object-oriented programming concepts.
- 13 years of experience in accordion performance with awards in international competitions.
- 5 years of experience in choral performance.
- Participation in university badminton and volleyball clubs.