

Oliver Pranis

oliver@caltech.edu | +1 (626) 360-8869 | www.opran.is

EDUCATION

California Institute of Technology

Bachelor of Science in Electrical Engineering

GPA: 4.0

Pasadena, California

Expected 07/24

PROJECTS

8-bit CPU Digital Design and Verification using a Hardware Description Language

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 Binarario game.
- Communication protocols, 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, MOSFETs, op-amps, use of lab equipment.

SKILLS

Electrical Engineering: VHDL, FPGAs, Computer Architecture, LTspice, PCB design, Lab equipment usage.

Programming: Python (numpy, scipy, pandas), Java, C, C++, Assembly, MATLAB, JavaScript, PHP, SQL, Linux CLI.

WORK EXPERIENCE

Axonics

Electrical Engineering Intern

Irvine, CA

June - August 2022

- Testing custom test fixture systems used in validation and design of Implantable Pulse Generators.
- Designing software, and scripting for test fixture data analysis.

Scandiweb

Junior Web Developer (full stack)

Riga, Latvia

June - August 2019, 2020

- Worked on front- and back-end solutions of web applications for various Magento e-commerce sites.
- JavaScript (React), PHP, MySQL, HTML, CSS (SCSS), Linux CLI, Git, Docker

TEACHING ASSISTANTSHIPS

- Introduction to Digital Logic (digital design, computer architecture, 8-bit CPU design).
- Electronic system prototyping (designing, constructing and testing a system from a schematic to a soldered prototype).
- Introduction to Programming Methods (fundamental data structures and algorithms).

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 characterization in FDTD Lumerical simulations, using scripting.

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 light-sensing detectors using a scanning electron microscope and evaluating their performance.

INTERESTS

- Game development in a team using object-oriented programming. Game was chosen to represent Latvia internationally.
- 13 years of experience in solo and ensemble accordion performance with awards in international competitions.
- 5 years of experience in choral performance with tours and awards internationally.
- Participation in university badminton and volleyball clubs.