# Robin Teng

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## Education

**University of California – Santa Barbara** *Santa Barbara, CA, USA*

Bachelor of Science in Electrical Engineering with Physics Minor *Sept 2022 – Present*

- **Expected Graduation Date:** June 2026
- **GPA:** 3.5
- **Coursework:** Solid State Device Physics, Photonics, Integrated Circuits Design and Fabrication, Analog Circuits, Circuit Logic and Design, Signal Analysis, Electromagnetism, Thermal Dynamics, Quantum Physics, Data Structures and Algorithms, Machine Learning, Manufacturing Methods, Materials, Discrete Math, Calculus, Linear Algebra, Statistics and other supplementary math courses .....

## Personal Experience

**UCSB Nanofabrication Facility** *Santa Barbara, CA, USA*

Process Engineer Intern *March 2024 - Present*

- Comfortably work in class 100 clean room practicing standard cleanroom safety & protocols(PPE, safe waste disposal, chemical handling, etc).
- creating process travelers for new processes and training of other interns.
- Test run and record various data on different tools and samples for process control. Tools that I am proficient on are:
- lithography: Photo-lithography with ASML DUV, mask aligner, Spinning photo-resist, using developer
- Dry etching: Various ICP etching machines, mostly with SiO2 and Indium Phosphide(InP). For SiO2 I also did some Fluorine based etching.
- Wet etching: HF(&BHF), Piranha, Developer and other etchant mixed from solutions such as: NH4OH, H2O2, H2SO4, H3PO4.
- Deposition: PECVD of SiO2 and Si3N4(low stress), Ion Beam Deposition of: SiO2, Ta2O5, Al2O3, Si3N4 and TiO2, Oxidation furnace(also for diffusion doping & annealing), gold sputtering.
- Metrology: scanning electron microscope(SEM), Ellipsometer, Tencor Flexus(for film stress and bow), KLA Tencor Surfscan(particle counts & surface defects), Profilometer, Mapping Reflectometer(wafer mapping, uniformity, etc), four-point probe, optical microscope

**OPUS Lab Research** *Santa Barbara, CA, USA*

Undergraduate Researcher *Nov 2023 - Present*

- Researching about efficient computing through the use of probabilistic computing on physics based models namely Boltzmann machines and Emulations of Ising machine on FPGAs
- Working with a grad student doing simulations of probabilistic computing logics on matlab
- Currently experimenting with the use of Boltzmann Model on the transformer architecture used for training LLMs from the 2017 paper "attention is all you need". Being a energy based model along with with its stochastic nature, Boltzmann machine can be especially efficient for optimization problems which are widly present in the transformer architecture(attention mechanism, back-propagation...)
- Implementing and testing prototype of transformer model used for language translation built in Python with Pytorch.

**UCSB Society of Automotive Engineers(SAE)** *Santa Barbara, CA, USA*

(VCU)Vehicle Control Unit Designer *Sept 2022 - Jan 2024*

- Collaborated in a four-person team to develop a state machine for the VCU in C++ for our race car.
- We ran all processes on a Teensy 4.1 which controls the motor input output, charging logic, sensor input processing and error interrupts.
- Our car went on to compete at Formula SAE Michigan

**Cybercon Inc** *Remote*

Data Analyst Intern *Jun 2020*

- Worked with another intern under a mentor remotely on Jupyter notebook to analyse mass real time market data using algorithms.
- Used python with Numpy, Pandas, Matplotlib and Scikit-learn, to crunch data and attempt at predicting future trends.

**Personal Projects:** *Home, New Zealand*

Self-hosted Cloud Server *Aug 2023*

- Running a Ubuntu server out of my garage and hosting a cloud server with Apache2 on my domain, has a RAID 5 configuration, you can take a peek here: https://nextcloud.inecdote.com(takes a while to load overseas.)

LoRa Communication Radio Network *Nov 2023*

- Built a Encrypted radio communication mesh network from multiple 915MHz radio communication nodes which could be connected via Bluetooth to send/relay messages between.
- Has a stable range of 15km, this was especially useful since cellular signal did not cover some rural areas of New Zealand

More projects on my personal website that I built: robinteng.com *Aug 2024*

## Skills

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|---|---|
| **Programming** | Python/Pytorch, C++, Matlab, SystemVerilog, Linux Bash, LaTeX, Git, HTML/CSS/JavaScript, SQL. |
| **CAD** | Solidworks, Fusion 360, EAGLE PCB, KiCad, 3D Printing Slicer, Blender. |
| **Manufacturing/Fabrication** | Clean room skills as listed in experiences, 3D printing, CNC machining, lathe, laser cutting/engraving, band/miter/cold cut saw, composite layup, MIG welding, soldering. |
| **Miscellaneous** | Communication Skills, Public Speaking, English(Fluent), Mandarin(Fluent), Social Media Marketing. |

**References available upon request.**