

# Michael Juan

## EDUCATION

### Carnegie Mellon University — MA Design

August 2024 - Current

### UC Santa Cruz — Computer Science Engineering

### Bachelors in Technology Information Management

2020

## EXPERIENCE

### HackerFab — Research

December 2024 - Current

- Building the world's first open source semiconductor fab. Part of the lithography stepper team
- Characterized our current litho-stepper's mechanical accuracy
- Designing and building a piezo nano-positioner
- Designing and building a friction bar drive nano-positioner

### TMJC Precision — Engineering Services

MAY 2021 - August 2024

#### Customer Projects

- Created an engineering service startup with 12 completed customer projects
- Prototyped thermal measurement equipment for satellites
- Machined emissions testing equipment
- Machined prototypes for bicycle components
- Designed and CNC-machined mechanical watch parts

#### My Own Products

- Created and launched a successful hardware Kickstarter with 12000 dollars in sales and 115 units sold

### Roobster AG — Design Engineer for Soflow People Mover

May 2022 - May 2023

- Designed and implemented self driving functionality for the Soflow People Mover. Clients include BMW and Schindler
- Designed automatic steering mechanism, braking system and application of sensors
- Wrote embedded software and was involved in integrating electrical systems
- Worked collaboratively on a multi-national team. Trained new hire on computer aided design and computer aided machining

### Walnut Valley Unified School District — Robotics Coach

OCTOBER 2021 - April 2022

- Taught students programming, usage of CNC, manual mill/lathe, hand tools, and power tools
- Designed curriculum for the program

### Gridware — Design Engineer for Gridware Gridscope

JAN 2021 - MARCH 2021

- Designed, prototyped, and manufactured sensor enclosures
- Provided in-depth assembly instructions and cost analysis
- Provided prototyping work that led to a 5.3 million dollar seed funding from Y Combinator
- Work named by Time magazine as 200 best inventions of 2022

## SKILLS

Programming (C, Python, Java)

3&4 axis CNC machining

Manual machining

CAD/CAM (Fusion 360, Solidworks)

Leadership experience.

Project management

## LANGUAGES

English (Native)

Mandarin (Native)

Taiwanese (Native)



Soflow People Mover



Gridware Gridscope



Production fixturing.

## PROJECTS

### **GPT Language model from scratch — *Ongoing***

- Target performance equivalent to chatgpt 2 124 million parameter model.
- Wrote a large language model from scratch

### **LinuxCNC conversion of manual mill**

- Converted a milling machine from manual to CNC
- Machined parts for the conversion on a knee mill.
- Programmed in C and Verilog

### **Formula SLUG SAE — *aerodynamics team***

- Built a carbon fiber curing oven and molds for FSAE race car body panels
- Prepared designs with input from finite element analysis

## ACTIVITIES / VOLUNTEERING

### **MAG Lab Makerspace - 3D Printing/CNC Lead, Quartermaster**

2017 - 2024

- Instructor for CNC machining
- Maintained and opened up the makerspace to the general public

### **UC Santa Cruz Backpacking Club— *President***

2019 - 2020

- Planned and led week-long trips in the Sierras
- Taught wilderness backpacking courses