# Andrew Chang

*(510)935-8199 • 21andrewch@gmail.com*

## Experience

**Startup** **Bay Area, CA**
Full stack developer *May 2023-July 2023*

- Creating a mobile app to manage legal documents and personal information
- Developed Front End using React Native CLI
- Developed Back end using Drizzle ORM, PlanetScale, Auth0
- Product Design, UI/UX

**IDEC**
Project Manager **Osaka, Japan**
*July 2023-August 2023*

- Led interviews and communicated with HR
- Created interview co-pilot for internal use
- Cleaned data (applicant resumés and previous interviews)
- Fine tuned model using OpenAI api

## Education

**University of Illinois Urbana Champaign** **Champaign, IL**
B.S. in Electrical and Computer Engineering - Grainger College of Engineering *August 2021-May 2025*
GPA: 3.0/4.0

**Relevant Coursework**

ECE 210 - Analog Signal Processing
ECE 385 - Digital Systems Laboratory
ECE 330 - Power Circuits and Electromechanics
ECE 313 - Probability with Engineering Applications
Math 213 - Discrete Math
CS 225 - Data Structures and Algorithms
Physics 213 - Thermodynamics
Physics 214 - Quantum Mechanics
ECE 408 - Parallel Programing

## Projects

**LeNet-5 Convolutional Layer Optimization**
Optimized the forward-pass convolutional layer of the LeNet-5 architecture using CUDA for image classification tasks. Implemented a CPU convolution layer, conducted profiling using gprof, and documented the process. Developed a baseline GPU convolution kernel and ensured correctness and timing across different dataset sizes. Applied performance optimizations such as tiled shared memory convolution, FP16 arithmetic, using Streams to overlap computation with data transfer, and shared memory matrix multiplication and input matrix unrolling. Utilized Nsight tools for detailed performance analysis. The project showcases proficiency in CUDA, optimization techniques, and GPU programming.

**AC-DC Power Supply Design with Voltage Regulation**
Implemented an AC-DC power supply with a voltage regulator. The task involved meticulous circuit design considerations, incorporating components like transformers, rectifiers, filters, zener diode regulators, op-amps, and transistors. Simulations were performed using LTSpice, leading to the construction of the power supply on a breadboard for subsequent bench testing. A final product was then soldered onto a PCB and ran through bench tests using a transformer. The project further expanded to enhance output voltage and current capabilities, integrating an op-amp for voltage amplification and a BJT for current gain. The completed project provides valuable insights into circuit design principles, hands-on soldering experience, and practical knowledge in ensuring stability and efficiency in power supply systems.

## Skills

Fluent in English and Chinese. Advanced proficiency in Japanese. Elementary proficiency in Korean

Soldering · Oscilloscope · Analog Signal Processing · Logic Design · VHDL · Embedded Systems · Field-Programmable Gate Arrays (FPGA) · RTL Design · SystemVerilog · Analog Circuits · Assembly Language · Intel Quartus Prime · Printed Circuit Board (PCB) Design · C (Programming Language) · C++ · Javascript · Python · SQL · Project Management · Computer-Aided Design (CAD) · Figma