

I'm a recent graduate from [University] with an M.S. in Electrical Engineering with an emphasis in microfabrication processing and nanotechnology. I have 2+ years in a cleanroom environment in two different laboratories. Effective communicator with an open mind willing to learn and adapt to a fast-paced environment. Eager for new environments and travel. I have a great interest in getting into the semiconductor industry and I'm looking for a role that allows for a big step forward in my career in terms of both responsibilities and growth within a company.

EDUCATION

M.S. Electrical Engineering, [University], Summer 2022; Cumulative GPA- 3.93

B.S. Electrical Engineering, [University], 2020; Cumulative GPA- 3.636 *cum laude*

A.E.S. Engineering Sciences, [Community College], 2017; Cumulative GPA- 3.745 *with honors*

PROFESSIONAL EXPERIENCE

Argonne National Laboratory User at the Center of Nanoscale Materials (CNM) (Jan. 22-Aug 22) Lemont, IL

- Acquired lab access and was trained by the permanent staff at the CNM on micro/nanofabrication systems and metrology equipment to prepare and optimize silicon wafer processing

Research Assistant for Dept. Microelectronics Research and Development Lab (Aug. 20-Aug.22) Dekalb, IL

- Extensive experience in a cleanroom laboratory environment including chemical safety training and gas cylinder exchanges
- Placed orders for day-to-day inventory, trained and enforced clean lab procedures, provided in-house repairs, diagnostic testing, and preventative care for high-vacuum systems and other laboratory equipment
- Maintained active contact with companies for quotes on replacement parts and service maintenance
- Co-led the MRDL portion of a tour for a local Congresswoman and the President of NIU that would secure funding for the future

GIS Technician (Jan. 17-Present) Public Works for [City], IL

- Worked in the ITS division for the department of Public Works, reported to the head Water Engineer for the city and the GIS Analyst. The internship involved the mapping and data assignment of utilities for the entire city

RESEARCH EXPERIENCE

Master's Thesis Dept. of Electrical Engineering [City], IL

CATHODE ELECTRON SOURCES FOR COLD FIELD EMISSION: FABRICATION METHODOLOGY FOR HIGH ASPECT RATIO SILICON NANOTIPS

- Successfully developed an innovative, low-cost, high-throughput, reproducible methodology for fabricating geometrically distributed arrays of high aspect ratio silicon nanotips using microscale equipment
- Used contact photolithography, microsphere & soft lithology to create high-resolution and high throughput patterning of silicon wafers
- Applied ICP-RIE, wet chemical etching, and oxidative sharpening methods to fabricate high aspect ratio, ultra-sharp, silicon micro/nanostructures
- Demonstrated process capability through detailed documentation and imaging of each step using various metrology systems and software (SEM, ImageJ, Spectrometry, Etc.)
- Trained another research colleague on the processes developed with reproducible results

CONSTRUCTED A BATTERY-OPERATED MODULAR ECG MACHINE

- Manufactured and tested instrumentation amplifiers, notch filters, bandpass filters, active high pass filters, voltage inverters, diodes, capacitors, and active low pass filters
- Analyzed signals using Fast Fourier Transform, displayed Output and ECG waveform using an OLED display and an Arduino Uno

INTELLIGENT MANIKIN AND CLIPPER:

- Integral member of a senior design team for Wahl Clipper Corporation that built a prototype system to guide an untrained user through a predetermined haircut
- Designed, tested, and built a multiplexed proximity detection scheme using hall sensors with closed-loop corrective user feedback
- Coded a unique Bluetooth Low Energy GATT read/write profile for information transfer and data collection

SOFTWARE & EQUIPMENT EXPERIENCE

Various: PSpice, B2Spice, AutoCAD, MathCAD, EAGLE, ImageJ (FIJI), Esri ArcGIS, C++, Python

Metrology: SEM, Optical Microscopes, Light filtering systems, Spectrometry systems

Deposition Systems: E-Beam Evaporator, Sputtering systems, Oxidation Furnaces

Plasma Etching: ICP-RIE, CCP-RIE, Gas Recipe Optimization

Photolithography: Photoresist Spinning, Positive, Negative, and Image Reversal Photoresists, Selective Wet Chemical Etch, SUSS MA6/BA6: Contact Aligner, Wafer Priming Oven, Quintel Mask Aligner and Exposure System

COMMUNITY AFFILIATIONS

- Eagle Scout (2012)
- 200+ volunteering hours (2009-present)
- Member of Electrical and Electronic Engineering Honor Society IEEE-Eta Kappa Nu (2017-present)