

## EDUCATION

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### Cornell University

Ithaca, NY

*B.S. in Computer Science (Engineering)*

*Expected May 2026*

- GPA: 4.15. Fall 2024 Junior transfer student.

### The University of Arizona

Tucson, AZ

*B.S. candidate in Computer Science, B.S. candidate in Chemistry*

*August 2022 — May 2024*

- GPA: 4.0. W.A. Franke Honors student
- Coursework in Computational Chemistry (graduate level), Computer Science, Mathematics

## WORK EXPERIENCE

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### Industrial Design and Engineering Company (IDECO-NV)

June 2024 — Present

*Full-Stack Software Engineer*

*Las Vegas, NV*

- Leading full rewrite & modernization of the company's web application, driver routing, and payroll management
- Implementing new web stack to completely replace legacy interface for ~50 employees

## RESEARCH EXPERIENCE

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### Applied LLMs for Large Structured Data

September 2024 — Present

*Dr. Jennifer Sun*

*Ithaca, NY*

- Working with agricultural researchers to utilize large language models in a data restructuring pipeline
- Result will, if successful, supercede 50 – 100 past hours of work and automate a 5-hour manual process

### Computational Chemistry & Optimization - [go.thekoppe.com/OptiSpec](http://go.thekoppe.com/OptiSpec)

November 2022 — Present

*The Brédas Research Group – Dr. Veaceslav Coropceanu*

*Tucson, AZ & Remote*

- Developing a vibronic Hamiltonian modeling package in Python to simulate optical absorption spectra
- Achieved a 99% reduction in runtime (3 hours to ~30 seconds) by extensively optimizing legacy FORTRAN code
- Engineering high-performance code with JAX for autodifferentiation to unlock automated curve-fitting
- Simulated electronic state results will be used to write two papers

### ML Counterfactual Risk Estimation & Minimization

October 2023 — Present

*Dr. Kwang-Sung Jun*

*Tucson, AZ & Remote*

- Investigating and utilizing rigorous mathematical methods to improve machine learning recommendation models
- Extending and enhancing research codebases to implement methods for off-policy estimation and optimization
- Running 100 compute-hours/month of off-policy learning experiments

### Bioinformatics - Report: [go.thekoppe.com/BioDoc](http://go.thekoppe.com/BioDoc)

September 2023 — December 2023

*Dr. Charles Higgins*

*Tucson, AZ*

- Investigated alternatives to a popular R package for gene relationships in large biological datasets
- Wrote a formal 10-page report on my findings detailing progress, results, and recommendations (see URL)

## PROJECTS

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### BearTrak iOS Application - [go.thekoppe.com/BearTrak](http://go.thekoppe.com/BearTrak)

October 2024 — Present

*Creator & Sole Developer*

*Ithaca, NY*

- Created a realtime iOS app for Cornell students to track campus dining, transit, and gym information
- BearTrak uses a Go backend and OpenTripPlanner routing network, both hosted on an AWS server
- Reached 1,000+ downloads within two months of its December 2024 release

### Banner Hospital Volunteer Services Scheduling System

September 2023 — October 2023

*Sole Developer*

*Tucson, AZ*

- Spearheaded a full replacement of the office's manual system with a dynamic spreadsheet
- Eliminated 20 hours of work/month with background script routines

## TECHNICAL SKILLS

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**Languages:** Python, TypeScript, JavaScript, Go, Java, Swift, Rust, Julia, R, FORTRAN, HTML/CSS, LaTeX

**Frameworks:** React, SwiftUI, Svelte/SvelteKit

**Developer Tools:** AWS, Nginx, Neovim, Git, Google Cloud Platform, Postman, DBeaver, Visual Studio Code, Xcode

**Libraries:** JAX, pandas, NumPy, SciPy, Matplotlib, PyTorch, Scikit-learn