

Benjamin Koppe

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EDUCATION

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

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

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

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

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

BearTrak iOS Application - 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 500 downloads within a week 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

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