

Tavin Turner

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github.com/itsTurner linkedin.com/in/tavin-turner

RELEVANT WORK EXPERIENCE

Contracted Full Stack Engineer · ProDigita Co. · Boulder, CO · July 2024 — May 2025

- Led a full stack web team on Python Django backend + React frontend + MongoDB
- Ownership over Scrum project management, AWS deployment, + RESTful backend

Course Assistant · University of Colorado Boulder · Boulder, CO · Aug 2023 — May 2025

- Taught discrete mathematics, data science, and Python for CS students

Research & Education Intern · CS@Mines · Golden, CO · June 2020 — August 2020

- Designed, implemented, and deployed CNN-LSTM model deployed to mobile
- Developed and taught CS and STEM curriculum to hundreds of K-12 students

PROJECTS

Error Propagation in Neural ODEs · March 2024 — May 2024 · [C++](#), [Python](#), [Julia](#)

- Devised a method to bound numerical error in neural ODE predictions
- Implemented ODE solvers (Euler, Midpoint, Ralston, + RK4) in C++ and neural ODEs, a class of infinite-depth neural networks, in Python using the C++ solver
- Reimplemented later in Julia for performance gains and semantic expressivity

Legislative Compromise Representation · July 2024 — Present · [Python](#), [Gurobi](#)

- Computationally extracting structured representations of statutory compromise
- Using neuro-symbolic techniques to induce explainable logic in language models
- Implemented in PyTorch with Python and linear program solver Gurobi Optimizer

Tiny Shell · April 2023 — May 2023 · [C](#), [C++](#), [Computer Systems](#), [Linux](#)

- Implemented a minimal flavor of the Bourne shell in C and C++, including signal handling, forked jobs, and a trace-driven shell driver

Socialpedia · August 2024 · [Java](#), [Spring Boot](#), [WebExtensions API](#), [Google Cloud](#)

- Fueling Wikipedia deep-dives with a simple social media app embedded in a browser extension, connect your Wikimedia account and share Wikipedia snippets

Inflectional Cognition in Large Language Models · January 2024 — May 2024 · [Python](#)

- Inspecting large language model behavior to align with human inflection behavior
- Employed models from BERT to GPT-2, contributing to open-source model hosts

Classical Methods for Media Bias Prediction · April 2024 — May 2024 · [Python](#)

- Implemented and compared explainability over frequent itemsets, bag-of-words, KNN, and SVM approaches to media bias prediction from news text

Inner Product Methods in Neural Networks · May 2023 · [Python](#), [Numerical Computing](#)

- Investigated non-Euclidean inner products between neural layers for introspection
- Used numerical computation and matrix techniques to elucidate a Python model

EarthForce Outreach Portal · August 2022 — August 2023 · [React](#), [Firebase](#)

- Accelerated technical operations for environmental outreach nonprofit EarthForce
- Tech lead on React app with Firebase backend tripling throughput for limited staff

SquadSync · August 2023 — December 2023 · [React Native](#), [Node.js](#), [PostgreSQL](#), [GCP](#)

- Led a team of five engineers building a social platform for in-person connections
- Deployed hybrid native React Native app with a TypeScript Node backend

COLORS [Python](#), [C/C++](#), [JavaScript](#), [Java](#), [Domains](#), [Other Tools](#)

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TurboTransit · August 2023 — December 2023 · *React, Node.js, AWS, GCP*

- Tech lead on a team of six engineers building an open-invite community ride-sharing app with trip planning, instant messaging, and recommendations
- Managed in Agile workflow and deployed React + Express + PostgreSQL on AWS

Sentiment · August 2020 — May 2022 · *Vue.js, Capacitor Native, Python, TensorFlow*

- Led a team of five in high school Computing for Social Good program, producing a sentiment-aware micro-journaling app for continuous mental health monitoring
- Trained and deployed CNN-LSTM dimensional sentiment model with TensorFlow
- Designed and built mobile app with Vue.js on Capacitor with embedded AI model

Quantum GASI · January 2021 · *Python, Quantum Computing, Machine Learning*

- Leveraged quantum computing to speed up inner products in game state analysis algorithm. MIT Quantum Hackathon 2021 Gate-Based Division winner. IonQ event.

EDUCATION

University of Colorado Boulder · Computer Science BS (*May 2025*) + MS (*May 2026*)

COURSES Fund. Concepts of Prog. Langs, Linear Programming, Numerical Computing, Computer Systems, Advanced Data Science, Algorithms, Software Dev.

RESEARCH NLP+CSS @ [BLAST](#), Numerical Computing @ [PLV](#), NLP @ [NALA](#)

ORGS Engineering Honors Program, Blueprint Boulder, KΘΠ

SKILLS + COMPETENCIES

DOMAINS ML · Cloud · Numerical · Full Stack · Data Science · Optimization

TECHNOLOGIES C/C++ · Python · JavaScript · Shell · Java · Rust · Go · SQL · REST

TOOLS AWS · Google Cloud Platform · Linux · Docker · GDB · Firebase · MS Office

INTERPERSONAL Presentation · Public Speaking · Technical + Research Writing

SOFT SKILLS Research · Critical Thinking · Leadership · Project Management