Colin Pannikkat

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Education

B.S. Computer Science, Minors in Economics and Math — **Expected Graduation June 2026**
Oregon State University — *Corvallis, OR*

- GPA: 3.97
- Participating in an **Accelerated Master's in Computer Science** through the AMP program.
- Relevant coursework: Discrete Mathematics, Vector Calculus I, Linear Algebra I, Mathematical Statistics, **Data Structures**, Computer Architecture & Assembly Language, **Analysis of Algorithms**, **Operating Systems I/II**, **Machine Learning**, **Causal Inference**

Experience

BPP Lab Assistant — September 2024 – Present
Forest Ecophysiology Lab, OSU — *Corvallis, OR*

- Refactor and debug a **C++** stomatal optimzation model for reproducibility, addressing numerical instabilities and improving maintainability with object-oriented programming.
- Analyze simulation outputs and generate visualizations using Python (**Pandas**, **Matplotlib**) to study plant responses to climate variations.
- Collaborate with lab members through bi-weekly meetings and manage version control using **Git** and **GitHub**.

Supplemental Instruction Leader — 2023 – Present
Academic Success Center, OSU — *Corvallis, OR*

- Leading peer-education study tables for ECON201, Intro to Microeconomics, for 8–12 students per session, implementing the best practices of collaborative learning while synthesizing relevant course content based on course lectures.
- Collaborate with faculty and other SI leaders to align tables with course goals and enhance student outcomes.

QA/QC Intern — July 2024 - September 2024
Zabble Inc. — *Remote*

- Tested the Zabble Zero mobile app weekly, identifying and documenting bugs to improve functionality and user experience.
- Collaborated in an **Agile** workflow using **Jira** to manage and track user stories, story points, and project progress utilizing the **Kanban** framework.

Backend Software Engineer Intern — April 2024 - June 2024
College of Business, OSU — *Corvallis, OR*

- Developed a Retrieval-Augmented-Generation (**RAG**) pipeline using **LlamaIndex** and **ChromaDB** for efficient query processing and built an API for pipeline interaction with **Flask**, including **JWT**-based authentication.
- Collaborated with a 6-member team and stakeholders to define requirements and track progress through bi-weekly meetings.

Undergraduate Researcher — 2022 – 2024
Secure AI Systems Lab (SAIL), OSU — *Corvallis, OR*

- Led individual research projects regarding evaluation of adversarial perturbations in **NLP**, adversarial jailbreaking of **LLMs**, and evaluation of interpretable bias detection method for LLMs under the mentorship of Asst. Prof. Sanghyun Hong.

Skills

Languages: Python, C, C++, R, JavaScript, TypeScript, HTML/CSS, Java, Bash
Frameworks/Libraries: PyTorch, NumPy, Pandas, Scikit-Learn, MatPlotLib, StatsModels, Transformers, LlamaIndex, Flask, JWT, FastAPI, Pydantic, React
Tools: Git, LaTeX, VSCode, Makefile, ChromaDB

Projects

GetTheDamClass | *Chrome Extension API, React, Python, Flask, MySQL* — November 2024

- In a team of 4, we deployed an extension with 31 users that offers a notification button for class vacancies, improving students access to class enrollment information from 30 minutes to <2 minutes.

MLP for Digit Recognition | *Python, NumPy, PyTorch, OpenCV* — August 2024

- Implemented a multi-layer perceptron with Gradient Descent using PyTorch for tensor multiplication and backpropogation, achieving 93% test accuracy on the MNIST dataset.

Extracurriculars

Participant (Winner 4x), Hackathon Club — 2022 – Present
Vice-President (Prev. President), Skate Club — 2023 – Present
Member, Association for Computing Machinery — 2023 – Present
Co-President, Economics Club — 2023 – 2024