Colin Pannikkat

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Education

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

- GPA: 3.96
- 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*

- Contributing to ongoing research on plant ecophysiology by utilizing a mechanistic process-based computer simulation model in **C++** to explore how energy balance affects plants' ability to tolerate high temperatures.
- Refactoring existing model to follow object-oriented programming principles to increase maintainability and reliability.

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

- Planning and facilitating multiple 50-minute study tables of 8-12 students per week for ECON201, Intro to Microeconomics, implementing best practices of collaborative learning, and synthesizing relevant course content based on course lectures.

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

- Conducted weekly testing of the Zabble Zero mobile app for predetermined scenarios with detailed testing methods and results in written reports
- Developed workflow to partition user data and minimize Athena query size in Quicksight using AWS Glue, PySpark, and Boto3, reducing the cost of AWS S3 services by 33%.

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

- Planned and developed a proof-of-concept interactive chatbot in a team of 6 with the goal of offering class, assignment, and advising support to 500-600 business freshmen yearly.
- Implemented a Retrieval-Augmented Generation (RAG) LLM pipeline in **Python** using LlamaIndex and ChromaDB for efficient information retrieval. Used Flask with JWT for static page serving and authentication.

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

- Contributed to meaningful research on security and privacy issues in ML and AI under Asst. Prof. Sanghyun Hong.
- Worked on projects regarding evaluation of adversarial perturbations in NLP, adversarial jailbreaking of LLMs, and evaluation of interpretable bias detection method for LLMs.

Projects

Backcast | *Python, Flask, AWS, PyTube, PyDub, JS, 3JS, Git* May 2024

- Built a 24/7 AI-powered radio stream that continuously scrapes music and generates radio jockey content similar to an old radio news station.

Focii | *Chrome Web API, Python, Javascript, HTML/CSS, Node.js, Figma, Git* October 2023

- Developed and implemented a simple linear classifier to filter "distracting" websites based on the word embeddings of content, and trained the model on a curated dataset of distracting/non-distracting content.

Skills

Languages: Python, C/C++, LaTeX, Bash, R, JavaScript, HTML/CSS
Frameworks/Libraries: PyTorch, NumPy, Scikit-Learn, MatPlotLib, StatsModels, Transformers, LlamaIndex, Flask, Git
Paradigms: Object-Oriented Programming, Dynamic Programming, Functional Programming
Interpersonal: Leadership, Facilitation, Communication, Planning, Organization, Technical Writing, Resourcefulness

Extracurriculars

President, Skate Club 2023 – Present
Participant, Hackathon Club | Winner **3x** (Spring 2023, Fall 2023 and Spring 2024) 2022 – Present
Member, Association for Computing Machinery 2023 – Present
Co-President, Economics Club 2023 – 2024