Colin Pannikkat

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EDUCATION

Bachelor of Science in Computer Science **Expected June 2026**

Oregon State University | GPA: 3.97 *Corvallis, OR*
- Minors in Economics and Math
- Relevant coursework: NLP with Deep Learning, Deep Learning, Machine Learning, Causal Inference, Data Structures, Analysis of Algorithms, Operating Systems, Mathematical Statistics, Computer Architecture & Assembly Language, Discrete Math, Vector Calculus, Differential Equations, Linear Algebra

Master of Science in Artificial Intelligence **Expected June 2027**

Oregon State University | GPA: 4.00 *Corvallis, OR*
- Early completion via the Accelerated Master's Platform.

EXPERIENCE

BPP Lab Assistant September 2024 – Present

Forest Ecophysiology Lab, OSU *Corvallis, OR*
- Refactoring a process-based stomatal optimization model in **C++** using **OOP**, addressing numerical instabilities.
- Building support scripts in **Python**, analyzing simulation outputs, running sensitivity analysis, and generating visualizations to study plant responses to climate variations.
- Collaborating with lab members in bi-weekly meetings and managing version control using **Git** and **GitHub**.

QA/QC Intern July 2024 - September 2024

Zabble Inc. *Remote*
- Developed systematic testing plans to identify and document bugs, improving functionality and user experience..
- Collaborated in an **Agile** workflow using **Jira** and **Kanban** to manage and track user stories and story points.

Backend Software Engineering Intern April 2024 - June 2024

College of Business, OSU *Corvallis, OR*
- Developed a Retrieval-Augmented-Generation (**RAG**) pipeline using **LlamaIndex** and **ChromaDB** for document retrieval and efficient query processing
- 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.

Supplemental Instruction Leader May 2023 – June 2025

Academic Success Center, OSU *Corvallis, OR*
- Facilitated peer-led study tables for Intro to Microeconomics, supporting 40–60 students weekly by developing table plans, applying collaborative learning strategies, and synthesizing key concepts from course lectures.
- Collaborated with faculty and other SI leaders to align tables with course goals and enhance student outcomes.

Undergraduate Researcher September 2022 – June 2024

Secure AI Systems Lab (SAIL), OSU *Corvallis, OR*
- Led individual research projects including evaluation of adversarial perturbations in **NLP**, adversarial jailbreaking of **LLMs**, and evaluation of interpretable bias detection method for LLMs.

PROJECTS

Automatic Differentiation Framework | *Python, NumPy*
- Implemented reverse-mode autodiff engine with dynamic graph construction for backpropagation; faster than PyTorch.

OSU Class Vacancy Notification | *Chrome Extension API, React, Python, Flask, MySQL*
- Built Chrome extension in 48 hours to notify users of class vacancies, reducing info lag from 30 to <2 minutes; 66 users.

SKILLS

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

EXTRACURRICULARS

Participant (Winner 4x), Hackathon Club 2022 – Present
Member, Association for Computing Machinery 2023 – Present
President, Skate Club 2023 – 2025
President, Economics Club 2023 – 2024