Reza Abdollahi

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EDUCATION

Penn State Erie, The Behrend College — **Graduation: Fall, 2027**
Bachelor of Science in Software Engineering — **GPA: 3.99**
Schreyer Honors College Scholar — **Graduation: Fall 2027**

PROJECTS

- **Homebase-Style Web Application (Ongoing)**
  - Designed and implemented a **full-stack scheduling platform** with **React**, **TailwindCSS**, and **FastAPI**
  - Built **authentication, scheduling features, and a messaging system** for user communication.
  - Developed and maintained RESTful APIs, applying clean architecture principles.
  - Currently expanding the app with **auto-generation of shifts**, an innovative feature not found in the actual Homebase app, to streamline scheduling efficiency.
- **API Integration Mini App (In Progress)** — Experimenting with **React and OpenWeather API** to display real-time weather updates.
- **Testing Automation (In Progress)** — Writing **Jest tests** for Homebase components and exploring **Cypress** for end-to-end testing.

RESEARCH EXPERIENCE

Undergraduate Research Assistant – Computer Vision & Deep Learning — **Penn State Behrend | Spring 2024**

- Researched CNN models, specializing in YOLO architecture for real-time object detection.
- Studied seminal works such as AlexNet to understand convolutional layer design and performance trade-offs.

Undergraduate Research Assistant – Natural Language Processing — **Penn State Behrend | Summer 2024**

- Scraped and curated a **custom dataset** from the university website for fine-tuning **T5-based** and **Llama-3.1-8B** models.
- Created a QA-specific dataset for fine-tuning BERT-style models.
- Developed a model selection framework to help developers choose LLMs based on speed, accuracy, and resource requirements.

Undergraduate Research Assistant – Genomic Data Analysis — **Penn State Behrend | Summer 2025**

- Collected and processed genomic sequence data from the GPL570 dataset for unsupervised learning tasks. Having over 170 thousand rows (people) and over 54 thousand columns (genes).
- Designed and trained a sparse autoencoder that identified the top 5% of probes, reducing dataset dimensionality by 95% without performance loss.

WORK EXPERIENCE

Tutor of Math and Science, Programming — **Spring 2023 - Present**
Lifeguard | YMCA — **Summer2024 - Present**
Front Desk| LRC of Penn State Behrend — **Fall 2024 – Present**
Physics Teacher Assistant | Penn State Behrend — **Fall 2025**
Digital Circuit Lab Assistant & Grading Assistant| Penn State Behrend — **Fall 2025**

TECHNICAL SKILLS

- **Programming Languages:** JavaScript, Python, C++, Java, VHDL
- **Front-End:** React, Vue (familiarity), HTML, CSS, Tailwind
- **Back-End:** Node.js, Django (familiarity), FastAPI
- **Testing:** Jest, Cypress (basic)
- **Databases:** SQL
- **Cloud/Tools:** AWS, Azure, Git/GitHub