Aayush Koirala

Maynard, Massachusetts | 781-392-7903 | aayush.k204@gmail.com | linkedin.com/in/aayush-koirala-aa3a46222 | github.com/AKSProjects

EXPERIENCE

Undergraduate Research Assistant — *Summer 2024*
University of Massachusetts Amherst, (CICS) — Amherst, MA
- Conducted research on Machine Learning (ML) security under the guidance of a graduate leader.
- Utilized Jupyter Notebook to analyze and implement various neural network architectures, including LeNet, AlexNet, VGG, ResNet, DenseNet, and MobileNet.
- Explored the theoretical trade-offs between robustness and accuracy in ML models, and reviewed seminal papers such as "Deep Residual Learning for Image Recognition" and "Theoretically Principled Trade-off between Robustness and Accuracy."

Software Engineer Fellow — *Summer 2024*
Headstarter AI — Remote
- Participated in a 7-week software engineering fellowship focusing on building 5 AI projects, 5 weekend hackathons, and a final project.
- Engaged in interview prep, resume reviews, and received feedback from real software engineers.
- Currently working on a final project aimed at raising $1000+ with 1000+ users.

Fellow — *Summer 2022*
SoarCS — Lowell, MA
- Participated in a pre-semester program, SoarCS, enhancing coding skills and networking with fellow students.
- Attended Red Hat's DevConf.US conference.

Instructor — *Jan 2021 - Sep 2022*
Elevate the Future Massachusetts — Acton, MA
- Taught computer science and business principles to over 300 middle and high school students with a team.
- Led a 6-week introductory Python programming course and introduced data structures concepts.

PROJECTS

Inventory Management Web App | *React, Next.js, Firebase* — Summer 2024
- Developed a web application for managing inventory with user authentication, real-time data management, and CRUD operations for inventory items.
- Features: User authentication with Google Firebase, real-time inventory data management with Firestore, CRUD operations for inventory items, search functionality, CSV import for bulk adding inventory items, animations with Framer Motion, image classification for inventory items using MobileNet.
- Technologies: React, Next.js, Firebase, Framer Motion, CSV parsing library, TensorFlow.js.
- Project available at: Grocerease Inventory Web App.

Personal Portfolio | *React, Vite, Tailwind CSS* — Summer 2024
- Developed an interactive and visually engaging web application to showcase skills, experiences, and projects.
- Features: Responsive design optimized for both desktop and mobile devices, interactive Navbar with 3-dash dropdown menu on mobile, horizontal scrollable train of technology icons draggable on mobile, smooth scrolling for in-page navigation.
- Technologies: React, Vite, Tailwind CSS, Framer Motion.

Ohara | *Django, PostgreSQL* — Spring 2023
- Developed a database of popular manga across multiple genres and demographics, featuring a clear UI and extensive search functionality.
- Features: User-friendly interface with search bar, extensive database of over 2000 manga titles, and functionality simplified compared to MyAnimeList.
- Technologies: Django, PostgreSQL, Bootstrap.

EDUCATION

Bachelor of Science in Computer Science — *Graduated: Spring 2024*
University of Massachusetts Amherst — Amherst, MA
- Relevant Coursework: Data Structures, Algorithms, Machine Learning, Artificial Intelligence, Databases, Computer Networks, Operating Systems, Web Development.

SKILLS

Programming Languages: Python, JavaScript, TypeScript, Java, C++.
Frameworks & Libraries: React, Next.js, Node.js, Express, Django, Tailwind CSS, Bootstrap, TensorFlow.js, Framer Motion.
Databases: MySQL, PostgreSQL, MongoDB, Firebase Firestore.
Tools & Platforms: Git, Docker, Jupyter Notebook, Google Cloud Platform, Vercel, Heroku.