Tri Nguyen

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Education

Indiana University Bloomington, IN
Bachelor of Science in Computer Science, Minor in Business *Aug. 2022 – May 2026*
Hutton Honors College Member GPA: 3.87/4.00
Courses: Honors Data Structure, Linear Algebra, System Programming, AI, Data Analysis & Mining

Experience

Software Engineer Intern Sep. 2024 – Present
Research and Education Networks Information Sharing Analysis Center *Bloomington, IN*

- Developing scalable CI/CD pipelines using Ansible for automated cloud infrastructure management.
- Configuring secure infrastructure with RBAC and security policies for REN-ISAC's cybersecurity.
- Utilizing PSQL and IntelMQ to audit databases containing network address blocks and client contact information.

Machine Learning Research Assistant Feb. 2023 – Present
Indiana University *Bloomington, IN*

- Preprocessing data and managing 700GB datasets on Linux/Unix servers to analyze weather forecast statistics.
- Deploying Vision Transformers and ResNet in TensorFlow to simulate and visualize atmospheric conditions.
- Applying Bash scripting and Python to automate tasks and submit jobs to HPC systems.

Software Engineer Intern May 2024 – Aug. 2024
NSF National Center Atmospheric Research *Boulder, CO*

- Designed and deployed CI/CD pipelines for the HPC system using GitHub Actions.
- Leveraged Kubernetes orchestration to optimize resource allocation.
- Utilized Docker-in-Docker technology to build CI-deployable servers.
- Leveraged Github webhooks and NGINX to autoscale organizational runners.

Projects

Autonomous Boat | *Python, Docker, Yolov8* Apr. 2024 – Jun. 2024

- Leveraged ROS 2 framework for sensor integration and state localization in an autonomous boat.
- Implemented computer vision utilizing OpenCV and YOLOv8 for buoy and object detection.
- Developed Python scripts for autonomous navigation, path planning, and obstacle avoidance.

Helmet Detection Webapp | *Python, Docker, FastAPI, Postgresql, Yolov8* Mar. 2024 – May 2024

- Implemented YOLOv8 and Faster R-CNN for helmet detection and OCR for license plates detection.
- Developed FastAPI to handle HTTP requests, ensuring real-time object detection.
- Built Postgresql database for storing detected license plates number.
- Integrated in Docker for scaling and multi-purpose deployment.

Technical Skills

Languages: Python, Java, SQL, R programming, C, C++, JavaScript, HTML, CSS, Racket
Frameworks: PyTorch, TensorFlow, Pandas, Numpy, SciKit-learn, Open-CV, Keras, FastAPI, Flask, React
Developer Tools: GCP, Azure, Terraform, Docker, Kubernetes, Linux/Unix, Postgresql, Ansible, Airflow, Spark

Volunteering and Extracurricular Involvement

Founder and Co-President Mar. 2023 – Present
Machine Learning For All club *Bloomington, IN*

- Developing and executing the organization strategies and outreach to the faculties and incoming speakers.
- Spearheading the developer teams to create Machine Learning and Data Science lectures for 100+ AI enthusiasts.
- Fostering a collaborative environment that encouraged knowledge sharing and skill development among members.