Atmadeep Arya, M.Tech

• aatmadeepaarya@gmail.com • 9611948767 • in/atmadeep-arya • atmadeep.github.io

SKILLS

Accomplished machine learning and computer vision engineer with a proven track record in optimizing models and inference for server-grade and edge AI hardware

Technical : Python · C++ · ONNX & ONNXRuntime · TensorFlow · Pytorch · Linux · AWS · Nvidia TensorRT · DeepStream · Docker · OpenCV · Numpy · Matplotlib · Pandas · PyBind11 · Gtest · Pytest
Interpersonal : Communication · Adaptability · Collaboration · Problem Solving · Leadership

EXPERIENCE

Computer Vision and Robotics Engineer
Arka Aerospace, Hyderabad   **January 2024 - April 2024**
· Constructed **inference pipeline for edge devices using Pytorch, TensorRT, and Nvidia's DeepStream library** to achieve speeds up to 120 FPS for custom object detection using YOLO models.
· Designed **object detection and tracking models** on edge devices using various YOLO models and custom trackers.
· **Researched methods in data collection and cleaning** for custom classes of objects from web and in-house data sources.
· Trained models on **cloud services including on AWS**.

Software Engineer
Multicoreware Pvt Ltd, Chennai   **February 2022 - December 2023**
· Achieved up to **3x performance boost by optimizing models and libraries** for accelerated inference on server-grade hardware.
· Enabled **SOTA model addition to the client's model zoo** by building testing and benchmarking suites in the ONNXRuntime framework.
· Developed expertise in CNNs, NLPs, and recommender systems using **Tensorflow, PyTorch, and ONNXRuntime frameworks**.
· Developed automation scripts for **performance and accuracy checks for various models**, including for CI/CD pipelines.
· **Awarded "Employee of the Month"** for contributions towards client's model zoo and their proprietary backend library.

Machine learning Engineer
Bitsilica Pvt Ltd, Hyderabad   **February 2021 - April 2021**
· **Optimized CNN model's inference for edge devices** resulting in the adoption of better-suited multi-device options.
· Utilized Django and Flask to improve API functionality for client demos.
· Developed a news reader app for extracting headlines from news feeds using **OpenCV and PyTesseract**.

Computer Vision and Robotics Intern
Avian Aerospace, Bangalore   **December 2017 - February 2018**
· Designed **object detection algorithm** for an underwater ROV deployed on an **onboard computer (Raspberry Pi)** for client demo.
· Developed algorithms using libraries like **NumPy and OpenCV for object detection, line following, and distance estimation**.

PROJECTS

Hands-on with ROS
Rigbetel Labs, Pune · github.com/atmadeep/ROS_projects · **August 2023 - October 2023**
· Learned usage of Navigation stack using Gazebo simulation.
· Created robots for simulation in Fusion 360 and exported them to URDF.
· Worked on Gazebo simulation with RViz for autonomous robots and fine-tuned the navigation stack for optimal performance.

IEEE Sponsored Project: Prototype of a Custom Quadcopter
Central University of Karnataka · **January 2020 - May 2020**
· Developed a low-cost, open-source hardware stack-based quadcopter aimed at robotics researchers and hobbyists.
· Led a team focused on component integration, design, fabrication, and market research for the final prototype.

Deep Learning based methods for autonomous navigation for drones
Master's Project · **Central University of Karnataka** · **June 2019 - April 2020**
· Developed understanding of deep learning architectures and datasets for building autonomous drones.
· Worked with a Jetson Nano-based drone for model deployment, inference workload balance, and optimization.

EDUCATION

Masters of Technology, Computer Science
Central University of Karnataka · **Karnataka** · **2019** · **8.53**
· Part of IEEE student society, elevated to IEEE Creative Learning Chair in 2018.
· Recipient of Merit-based scholarship for 4 semesters.
· Relevant coursework includes Machine Learning and Projects with Computer Vision.