Vignesh Prakash

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EDUCATION

Master of Science in Robotics, University at Buffalo — (Expected) Dec 2023
Course work: Machine Learning, Reinforcement Learning, Computer Vision & Image Processing — GPA : 3.96/4

Bachelor of Engineering in Mechanical, Sri Krishna College of Technology, Anna University — Apr 2018
Course work: Probability, Operations Research — GPA : 3.87/4

TECHNICAL SKILLS

Languages JavaScript, Python, Typescript, Shell Scripting, SQL
Technologies Pytorch, Pandas, Flask, FastAPI, NodeJS, React, MongoDB, LangChain, Pinecone, FAISS

PROFESSIONAL EXPERIENCE

Software Developer, Zoho Corporation — Chennai, India — May 2018 - Jul 2022

- Implemented Code Editor Widget, using Microsoft's Monaco Editor to deploy it in 20+ products across Zoho.
- Developed Drag & Drop website builder, using Custom Web Components to create real-time templates with interactive workflows, cutting front-end development time by 60% for non technical users
- Autogenerated test cases in Jasmine & Cypress, using Node.JS & ESLint, reducing the release build test time by 2 days
- Automated node package deployment, using Gitlab CI/CD pipelines, reducing the package delivery time by 5%
- Managed a team of 4 developers, by conducting sprint and retrospective meetings, to ensure proper workflow

INTERNSHIP

Data Science Intern, AI Camp — Palo Alto, California — May 2023 - Present

- Built a Computer Vision Model to detect brain tumors from MRI images, resulting in an F1 score of 0.87 [Website]
- Implemented a similarity searcher of vector embeddings using FAISS to construct prompts for Zero Shot Learning
- Guided 5 students in developing handwritten character recognizer using Pytorch, achieving 84% accuracy [Link]

PROJECTS

Faculty Finder App with RAG Chatbot: Webscraped contact details of over 100,000 staffs from 2000+ high schools across US, by using multiple prompt engineering techniques in Open AI GPT 3.5 turbo model at a cost of $0.0003/contact & pushed the details as vectors to Pinecone which acts as the database for Chatbot using Retrieval Augmented Generation.[Website]

Autonomous Firearm Detector using YoloV5 Model: Achieved 92% accuracy in firearm detection with a YOLOv5 model trained on 5000 CCTV images, while leveraging Google's ViTImageClassifier to classify gun handlers as police or public, enhancing public safety. [Try it here!]

Constrained Editor Plugin for Monaco Editor: Developed Node plugin for a most requested features in Microsoft's Monaco Editor Portal [#953] by adding restrictions in editable area by manipulating text ranges asynchronously. This package is published with 150+ weekly downloads [Try it here!]

Custom Doclet Generator Plugin for JsDoc: Devised a JSDoc plugin for dynamically manipulating tags to validate & customize output formats, thus generating documentation which has zero desynchronization with published versions

DQN, DDQN & Dueling DQN in Open AI Gym Environments: Trained a DeepMind DQN agent to optimize for maximum rewards, reaching an average reward of 230 in LunarLander-v2 within 3000 episodes & achieving an average reward 500 in Cartpole-v1 within 800 episodes.

AWS DeepRacer using Proximal Policy Optimization: Created a highly effective reward function tailored to excel the time trial race on the Expedition Super Loop track, by following optimal racing line calculated using the menger curvature function, and model achieved an outstanding 100% completion rate during evaluation, with 0 off tracks.

OPEN-SOURCE CONTRIBUTIONS

Microsoft/monaco-html#15: Solved worker failure issue caused due to asynchronous timeouts in Microsoft/monaco-html
Microsoft/vscode#123071: Updated title of the Key binding in shortcuts panel of Microsoft/vscode

CERTIFICATIONS

Career Essentials in Generative AI by Microsoft
SQL for Data Analysis
Large Language Models with Google Cloud
PyTorch Essential Training: Deep Learning