Kaushik Karthik Prasanna

Computer Engineering and Math Student

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Education

Rutgers University, New Brunswick *2020-2023*

Computer Engineering (SoE), Mathematics (SAS) New Brunswick, NJ

– Dean's List recipient, International Computer Science and Engineering Society (ICSES).
– Data Science Club, IEEE (robotics division), Head of Technology at JPS eSports, JPS Robotics

Experience

Edison Board of Education *Summer 2019*

Information Technology Intern Edison, NJ

– Configured MDM software to ensure secure analysis and remote management of over 17,000 devices.
– Applied knowledge of databases, electronics diagnosis/repair, and OS, including command line operations.
– Assembled Dell EMC Windows Servers for district-wide data processing programs and securing user data.

Collaborative Solutions, LLC *September 2021 - January 2022*

Data Analyst Extern Remote [New Brunswick, NJ]

– Analyzed hundreds of railroad/highway grade crossings across the US to research accident trends.
– Applied prior information about factors such as geography, wealth distribution, and accessibility.
– Used GIS data models and Microsoft Excel to manipulate data and produce safety recommendations.

Personal Projects

Deep Learning and Computer Vision

Real-Time Object Detection and Classification *TensorFlow, openCV, COCO, Mask R-CNN, TPU*

– Developed an instance segmentation model using the COCO dataset, consisting of 300k+ images and 80 classes.
– Leveraged Meta AI's Segment Anything and Mask R-CNN models using Google TPUs for accelerated training.

Dog Breed Classification using Deep Learning *deep learning, CNN, vision transformers (ViT), Keras, Python*

– Trained a CNN using Stanford Dogs dataset, consisting of 20,000+ labeled images and 120 unique breeds.
– Applied the ResNet50 and InceptionV3 models to achieve >90% accuracy through transfer learning.

Linux, Servers, and Networking

Raspberry Pi Docker Container *Linux, network server, MariaDB, IoT, MySQL*

– Deployed and manage low-resource intensive server-side applications, including homeassistant (IoT/smart home control), Nextcloud (self-hosted cloud storage), Plex (music server), and Pi-Hole (network-wide DNS adblocking).

PiGPT *(AI voice assistant on Raspberry Pi)* *openAI, NLP, Google Cloud, AWS, Python, API*

– Choose one of 4 fine-tuneable models from OpenAI API, turning any speaker/mic into a RPi voice assisntant
– Implemented Google Text-to-Speech Recognition/Azure for Speech-to-Text and Google TTS.

Software Engineering

Atomic Nature of Matter *Java, image processing, API, breadth first search (BFS), datasets*

– Analyzes image datasets to identify and track atomic particles in motion based on pixel density.
– Finds mass of particles and relative distances using breadth first search, all while in motion.

YelpHelp! *(Python App)* *Python, API, requirements engineering, Scrum, databases*

– Utilizes Yelp API to access popularity and safety data, producing ideal locations in a given radius.
– Implemented using Scrum with thorough documentation: requirements, architecture, tests, evaluation.

Technical Skills and Interests

Languages: Python, Java, MATLAB, C/C++, LaTeX, JavaScript, RISC-V
Tools and Software: Linux, Git, MS Office (Excel, Word, PPT), Intel Quartus, LTspice, Docker
Skills: Networking, Electronics Repair (smartphones, laptops), Cloud (AWS, GCP), OS (Win/Mac/Linux)
Areas of Interest: ML/AI, Deep Learning, Hardware/Robotics, Data Science, Blockchain/Cryptography

Relevant Coursework

Cryptography/Network Security	Data Structures and Algorithms	Digital System Design
Computer Arch. and Assembly	Intro to Deep Learning (ML/AI)	Linear Optimization