Kartik Soni

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EDUCATION

University of Massachusetts Amherst — BS. Computer Science with Honors AUG 2019 - MAY 2023

Computer Science Major | Recognised on Dean's List (all Semesters) | Awarded for being top 20% in academics consistently

GPA 3.90/4.00

Relevant Courses: Artificial Intelligence | Data Structures & Algorithms | Computer Vision | Database management | Design Patterns | Multithreading synchronization | Data Science | Probability | Analysis of Algorithms | Problem Solving & Object Oriented Programming | Data Mining & Machine Learning | Systems Programming | Information Systems | System Architecture | Programming in C

PROGRAMMING SKILLS

Python | Java & JUnit | Spring MVC | Mockito | Supervised & unsupervised learning | Neural Networks | Computer Vision (OpenCV, PyTorch) | NLP | Data Preprocessing | Transfer Learning | MongoDB | Express.js, React.js, Node.js | JavaScript | Typescript & Jasmine | Django, MySQL | REST APIs | Reddis | Terraform | Docker | Kubernetes | AWS | Hadoop | CI/CD Pipelines | NGINX | MVC | Singleton | Factory & Abstract Factory | Postman | Selenium | OpenAI APIs | Jenkins |, Hash Maps, Heaps, Graphs | Component based architecture | Angular | HTML | CSS, Bootstrap | C++ & GMock | Multithreading | Git, Github, GitLab |

EXPERIENCE

Whova, San Diego(CA) — Software Engineer AUG 2023 - PRESENT

- Working as a Full Stack Engineer (2 yoe), to maintain Whova event management software that supports large-scale bookings.
- Appointed as an Engineering lead for end-to-end product shipment from designing to development to testing, with duties including coding POC, MVP, Epic estimation, quality testing, working with managers & stakeholders, and cross-team collaboration
- Enhanced UI of Event management web page using Angular framework, architecture design with MVVM & added features like routing, lazy loading, asynchronous event queues, & structured code with TypeScript, HTML, and CSS
- Implemented automated availability & performance checks for applications by simulating traffic sent using Python script, Gitlab, curl, jq & Dynatrace API. Integrated automated email alerts to notify stakeholders of failures and anomalies
- Brainstormed the best solution for the team by doing a framework comparison RestAPI POC in Python & RestAPI POC in Spring Boot, creating HLD and LLD of backend modules, and technical reports based on KPI (response time, scalability, resource utilization, reliability, maintainability)
- Spearheaded the development of the APM tool (Dynatrace APIs) in gitlab job to analyze performance, availability, & reliability of apps, along with synthetic monitoring and RUM, to troubleshoot issues in large-scale apps
- Deployed apps on the Kubernetes platform & troubleshooting various parts of the apps, like as writing deployment, service & virtual manifest files
- Modernized legacy Java application into an optimized Spring Boot microservice & tested via JUnit. Documented RESTful APIs using Swagger
- Mentored interns and new hires through onboarding, project bootstrapping, and Agile practices; recognized as Employee of the Month for outstanding team support and leadership

University of Massachusetts, Amherst(MA) — ML Researcher (paper) FEB 2023 - MAY 2023

- Worked under Prof Jaime Davila as a Machine Learning researcher to develop CNNs to classify images for disease detection & prevention
- Designed and trained CNN models with varying architectures and kernel sizes on datasets of 4,000 to 13,000 images, iteratively improving model performance and addressing overfitting challenges.
- Implemented 4-fold cross-validation and optimized hyperparameters such as learning rate and network depth, resulting in enhanced model stability and generalization.
- Enhanced dataset quality and scale by sourcing diverse, well-distributed images and transitioning to the SGD optimizer, achieving a high F1 score of 91%

ISO New England, Holyoke(MA) — Software Engineer Intern JUN 2022 - AUG 2022

- Modernized legacy C++ application into an optimized Spring Boot Java microservice and conducted testing with JUnit.
- Participated in agile-style software development, used Postman to test APIs
- Built auth & role-based access, integrated SLF4J with Sentry for error logging, improved code quality with Lombok, SonarLint, JUnit & Mockito, scheduled emails via SendGrid (cron), and optimized API/DB calls using Redis caching

University of Massachusetts, Amherst(MA) — Teaching Assistant MAY 2022 -MAY 2023

- Taught Search Engine concepts to undergrad students using Python & implemented data structures to perform fast lookups on large documents (> 20 GB)
- Designed interesting assignments, conducted labs, and office hours to assist students with debugging code.

PROJECTS

Covid- Mask Detection (project): Designed a real-time mask detection application during COVID to support open-source initiatives and promote public safety

- Trained a Convolutional Neural Network (CNN) on a manually labeled and augmented image dataset (using rotations, flips, brightness/contrast shifts, and zoom) to simulate real-world face variations
- Used image processing & deep learning (TensorFlow and Keras) to produce 92% accurate results

Robotics IOT Project (project) : Made an autonomous wireless robot that can livestream video feed to YouTube

- Built a robot integrating computer vision (OpenCV), ultrasonic sensors, and motor control for real-time obstacle detection and avoidance; implemented autonomous decision-making for navigation using Python
- Enabled real-time video livestreaming to YouTube with H.264 encoding a Raspberry Pi; used Shell scripting for task scheduling; configured wireless networking for remote data transmission and control

Spam Filter (project): Developed a spam detection system using NLP and Naïve Bayes to filter unwanted SMS & emails.

- Addressed long-standing spam issues by implementing an AI-driven classification model
- Built an efficient solution to automatically detect and block advertisements in messages with an F1 score of 87%.

AWARDS & CERTIFICATES

Awarded with **Cum laude Recognition** for academic excellence (2023) | **Chancellor's Award** for continued good standing in Computer Science | **Certificates**: Deep Learning, Data Structures and Data Science | Medal of Recognition for graduating amongst the **top 20%** with honors.