Kartik Soni

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Education

UNIVERSITY OF MASSACHUSETTS AMHERST

- **Bachelor of Science in Computer Science with Honors**
- **GPA: 3.9| Graduated: May 2023 | Dean's List (All Semesters)**
- **Recognized for being in the top 20% of students academically.**
- **Relevant Courses:** Data Structures, Algorithms, Object-Oriented Programming, Computer Vision, Artificial Intelligence, Database management, System Architecture, Design Patterns, Multithreading synchronization and thread communication

Technical Skills

- **Tech/Languages:** Python, Java, C++, Spring MVC, JUnit, Mockito,
- **Machine Learning & AI:** Supervised and unsupervised learning, Neural Networks, Computer Vision (OpenCV, PyTorch), Natural Language Processing, Data Preprocessing, Model Optimization, Transfer Learning
- **Web Development:** MongoDB, Express.js, React.js, Node.js, JavaScript, Django, MySQL, REST APIs, Reddis, Microservice Architecture
- **Cloud & DevOps:** Terraform, Docker, Kubernetes, AWS (EC2, S3), Hadoop, CI/CD Pipelines, NGINX
- **Tools & Frameworks:** Git, JIRA, Agile Development, Postman, Selenium, OpenAI APIs, Gitlab, Jenkins
- **DSA:** Linked list, Stacks, Queues, Hash Maps, Heaps, Trees, Graphs, BFS/DFS
- **Design Pattern:** MVC, Singleton, Publisher-Subscriber, Factory, and Abstract Factory.

Experience

WHOVA, SAN DIEGO(CA) **-** SOFTWARE ENGINEER (AUG 2023 – PRESENT)

- Enhanced UI using angular framework, design and implemented with MVC/MVP/MVVM, routing, lazy loading, asynchronous event queues, structured code with Javascript, HTML, CSS3, updating DOM
- Publish events from the server side using a data-mapped publishing messaging framework (publisher-subscriber pattern)
- Automation achieved through the GitLab pipeline
    a. Applications working on the platform to check availability, performance
    b. Sending traffic to applications to check availability and reliability
    c. Using Python script send email notifications of failure/alert to all stakeholders
- Appointed as engineering lead for e2e project delivery. Responsibilities included epic estimation, POC/MVP, requirement gathering from stakeholders and fine-tuning of design after reviews from management, quality tested product, involved till Beta release
- Modernized legacy Java application into an optimized Spring Boot microservice and conducted testing with JUnit.
- Developed Rest API POC in Python and developed Rest API POC in Spring Boot.
    a. Did framework comparison and shared technical reports based on KPI
    b. Created HLD and LLD of backend modules and got reviewed at peer level and worked on Leads/Manager feedback till final doc.
- Migrating Apps on PCF to K8S platform
    a. Involved in writing deployment, service, and virtual manifest file

UMASS, AMHERST(MA) **-** ML RESEARCHER (FEB 2023 – MAY 2023)

- Worked under Prof Jaime Davila as a Machine Learning researcher.
- Deployed CNNs to classify images for disease detection & prevention.
- Performed hyperparameter tuning to attain a high F1 score of 91% & produced optimal results.
- Conducted data preprocessing and augmentation to improve model robustness and generalization.

ISO NEW ENGLAND, HOLYOKE(MA) **-** SOFTWARE ENGINEER INTERN (JUN 2022 -AUG 2022)

- Developed full-stack application using MERN stack
- Implemented multiple RESTful APIs using NodeJs and MongoDB
- Participated in agile-style software development, used Postman to test APIs

UMASS, AMHERST(MA) **-** TEACHING ASSISTANTSHIP (MAY 2022 -MAY 2023)

- Taught Search Engine concepts to undergrad students using Python
- Implemented efficient data structures to perform fast lookups on a large corpus of documents(over 20 GB)
- Designed interesting assignments, conducted labs and office hours to assist students with debugging code

PROJECTS

MASK DETECTION USING CNNS (*LINK*)

- Designed an application to detect whether a person is wearing a mask or not.
- Trained computer vision model on GPU using CNN on a fabricated dataset.
- Used image processing and deep learning with the help of TensorFlow and Keras.

SLEEP DETECTION FROM WRIST ACCELEROMETER DATA

- Built a robust sleep onset and wake detection model using time series data from wrist worn accelerometers with RNNs and Random Forests to enhance sleep state prediction accuracy.
- Developed end-to-end ML pipeline with EDA, model training, and optimization of memory usage by conducting feature engineering and data preprocessing on a 127 million-row dataset.

AI-POWERED LOANS USING SKLEARN(*LINK*)

- Deployed a machine learning model on the web using python web framework
- Fraud detection and loan prediction using hyperparameter tuning

ROBOTICS IOT PROJECT(*LINK*)

- Made an autonomous wireless robot which can livestream video feed to YouTube
- Used raspberry pi to come up with obstacle detection and avoidance bot

SPAM FILTER

- Developed a spam detection system using NLP and Naïve Bayes to filter unwanted SMS and emails.
- Addressed long-standing issues with spam by implementing an AI-driven classification model.
- Built an efficient solution to automatically detect and block advertisements in messages.

ACHIEVEMENTS

- Awarded with **Cum laude recognition** for academic excellence (2023)
- Earned **Chancellors Award** for continued good standing in Computer Science.
- Received **Deep Learning, Data Structures and Data Science certificates** from Udemy
- Received **Medal of Recognition** from UMass Amherst for graduating with top 20% honors.