

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, Redis, 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.

PERSONAL WEBSITE ([LINK](#))

- Developed personal website using Angular Js
- Built using standalone components for better reusability and maintainability.
- Ensuring seamless synchronization between the UI and application state using data binding.
- Enhancing UI elements and formatting data dynamically using Custom Directives & Pipes.
- Efficient navigation and improved performance using lazy loading with routing.
- Implemented ngOnInit, ngOnDestroy, and other hooks for efficient component management.
- Centralized logic using Angular services for handling API calls and shared data.

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.