

# 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)

- Worked on following in Engineering team at Whova with ~2 years of experience.
- 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 event from server side using data-mapped publishing messaging framework (publisher-subscriber pattern)
- Automation achieved through Gitlab pipeline . Tools used - curl, jq, Dynatrace API
  - Applications working on platform to check availability , performance
  - Simulated traffic sent to applications to check availability and reliability.
  - Using python script send email notifications of failure / alert to all stakeholders
- Developed RestAPI POC in Python and developed RestAPI POC in Spring Boot.
- Did framework comparison and shared technical reports based on KPI
- Created HLD and LLD of backend modules and got reviewed at peer level and worked on Leads/Manager feedback till final doc.
- Used APM tool (Dynatrace APIs ) in gitlab job for analyzing performance , availability , reliability of apps.
- Collected KPI from Dynatrace and showcase it to upper management in form of Dashboard and exported to excel/cvs sheet for further analysis
- Used synthetic monitoring and RUM to trouble shoot the issue in large scale apps.
- Writing swagger doc for internal usage within teams
- Migrating Apps on PCF to K8S platform

- Deploying apps on kubernetes platform and troubleshooting involved in writing deployment , service and virtual manifest file
- Recently , 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, cross team collaboration

#### **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)

- Modernized legacy C++ application (Strangler Fig designing) into an optimized Spring Boot Java microservice and conducted testing with JUnit-identifying module and replacing them .
  - Implemented authentication and role based authorization
  - Used slf4j to log errors and integrated with Sentry to notify management
  - Introduced Lombok to minimize issues with getter/setter methods in code
  - Did static code analysis with the help of SolarLint and dynamic code checks with Junit + Mockito
  - Scheduled sending emails via SendGrid using cron tasks
  - Used Redis to cache external API calls/ DB queries
- 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 ([LINK](#))**

- 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.
- Received **Employee of the Month** from Whova for taking new initiatives and exceptional performance