

Aditya Vikram Singh

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EDUCATION

University of Massachusetts Amherst

Master of Science in Computer Science (Data Science Concentration)

Coursework: Natural Language Processing, Neural Networks for Vision, Probabilistic Graphical Models, Applied Information Retrieval, Machine Learning, Algorithms for Data Science, Advanced Algorithms, Distributed and Operating Systems

Expected May 2024

GPA: 4.0/4.0

University of Massachusetts Amherst

Bachelor of Science in Computer Science and Mathematics

Distinctions: Summa Cum Laude, Dean's List (all semesters), Chancellor's Award Scholarship

Involvements: *Co-President and Technology Director*, CICSof; *Co-Director and Technology Member*, HackUMass Organizing Team

Dec 2022

GPA: 3.97/4.0

SKILLS

Languages: Python, JavaScript, TypeScript, Kotlin, Dart, Java, Ruby, C/C++, HTML/CSS, SQL

Frameworks/Libraries: React, Jetpack Compose, Flutter, Android, Angular, Node.js, Flask, Rails, PyTorch, Tensorflow

Cloud/Technologies: Firebase, Amazon Web Services (AWS), Heroku, Git, Docker, PostgreSQL, MongoDB

EXPERIENCE

Altius Strategic Consulting LLC

Software Engineering Intern

Nov 2023 – Present

Remote

- Building an Android mobile application using Jetpack Compose with Kotlin Coroutines and Dagger-Hilt dependency injections
- Integrated MediaPipe and MLKit alongside custom TFLite models for provisioning on-device machine learning routines for user flows
- Fine-tuned existing TFLite models for downstream tasks with knowledge distillation from custom pre-trained PyTorch models
- Engineered various remote functionalities via Firebase Authentication, Cloud Firestore, and AWS S3, tying in Crashlytics and Firebase Analytics for streamlined development

ICAD Holding Ltd. – Abu Dhabi

Junior Programmer

Jul 2023 – Aug 2023

Remote

- Developed mobile email client module in Flutter for administering 200+ email accounts by interfacing with IMAP/POP/SMTP servers
- Implemented user account backup-restore functionality, configuration-based login process for Microsoft Exchange servers, and caching process for user credentials and associated email messages via in-memory and persistent binary storage techniques for reduced latency

Ministry of Statistics Programme Implementation, Government of India

Solution Architect and Developer

Jun 2023 – Aug 2023

New Delhi, India

- Architected a data management and dissemination platform for public access to 100+ macro-economic indicators and 1000+ aggregate reports for India, built using React, Node.js and MongoDB, with existing landing page updated using Drupal and custom PHP embeds
- Created features for efficient data filtering, paginated fetching and UI improvements for improved responsiveness and UX appeal

iLink Digital Inc.

Software Engineer Intern

May 2022 – Aug 2022

Paramus, NJ

- Engineered an Angular/Ionic organization effectiveness management dashboard with a team of 4 frontend developers
- Reduced server-client latency by 30% by minimizing key-value terms while maintaining the lossless JSON structure
- Optimized two large-scale UI components, enhancing dashboard functionality and improving user experience
- Consulted on a hybrid cloud portal for managing client Edge-computing, and AWS and Azure cloud resources

InnovationM Technologies

Software Development Intern

Jun 2021 – Aug 2021

Noida, India

- Developed a grievance redress platform for internal use by 200+ employees from scratch, engineering the back-end using Node.js + Express server and modeling database layer with MongoDB through the Mongoose wrapper for JavaScript
- Designed the front-end using React with Redux for state management and performed API integration of 10+ endpoints, followed by containerizing the application via Docker for easier deployment in an expansive micro-service architecture

PROJECTS

Music Genre Classification Analysis (github.com/AVS1508/SpectralCNN)

Visual Deep Learning Analysis using PyTorch

- Devised and implemented a deep CNN (SpectralCNN) trained from scratch on spectral features to perform music genre classification and applied transfer learning to small pre-trained CNNs ResNet-18 and EfficientNetv2-S for comparative empirical analysis
- Evaluated performance using metrics like accuracy, precision, recall, F1 score, confusion matrices, and AUC-ROC curves on GTZAN dataset to observe the minimal difference in learned representations of spectral and natural images, urging further exploration on larger datasets

Foliage (github.com/AVS1508/foliage)

Cryptocurrency Wallet/Tracker using Flutter and Firebase

- Built a cross-platform mobile app with user authentication, persistent data storage, serverless logic, and notifications
- Engineered efficient CRUD functionality for managing over 15 most popular cryptocurrencies and tracking real-time price fluctuations every minute with near 100% accuracy through Firebase Functions in a pub-sub design pattern
- Implemented 2 GitHub Actions to automate the release of APKs to Firebase App Distribution and perform CI/CD

URefer (github.com/AVS1508/URefer)

Job Referral Portal using React, NestJS and MySQL

- Programmed the server-side logic for the portal interfacing with SQL database, in a team of 6 back-end developers
- Introduced React UI development to 4 new front-end developers, explained paradigms for API integration from Express server, and presented weekly demonstrations of product features to the client, as part of a Software Engineering course