Arjay J.G

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Education

VIT Chennai — Chennai, India
B.Tech in Computer Science and Engineering - Grade : 89.5% — *Sept 2022 – Jun 2026*

Chettinad Vidyashram — Chennai, India
CBSE (12th STD) - Grade : 92.4 % — *May 2021 – Jul 2022*

The TVS School — Madurai, India
SSLC (10th STD) - Grade : 87 % — *May 2019 – Jun 2020*

Projects

Recipe Suggestion Web App | *React, Flask, AWS (Lambda, S3, DynamoDB, SageMaker, Amplify)* Aug 2024 – Nov 2024

- Built a full-stack web application that detects ingredients from user-uploaded images and suggests dishes with nutritional details and cooking steps
- Designed and deployed a serverless backend using AWS Lambda with DynamoDB for scalable recipe and user data storage, integrated with API Gateway for request handling
- Implemented custom ingredient recognition using YOLOv5 (PyTorch) trained and deployed on Amazon SageMaker with datasets stored in Amazon S3, with preprocessing pipelines automated via boto3
- Developed a responsive React.js frontend, hosted on AWS Amplify, featuring live webcam image capture, ingredient detection, and interactive recipe display

Movie Review Website | *HTML, CSS, JavaScript, Next.js, MongoDB, Rest API, Vercel* Jun 2024 – Jul 2024

- Developed a movie review website where users can log in, rate movies, and write comments, and use filtering functionality to search and sort movies based on ratings and reviews, which is deployed on Vercel
- Designed and implemented a Mongo database to store detailed movie records, user ratings, and comments
- Collaborated with frontend developers to integrate backend APIs with the user interface, ensuring seamless interaction
- Prepared project documentation outlining the high-level design components and presented a working demo to the academic review panel

Automatic Inscription Converter | *Python, Tensorflow, OCR, Streamlit* Nov 2023 – Feb 2024

- Developed a Tamil inscription converter for the Tamil virtual Academy that preprocesses, segments, and analyzes inscriptions using a machine learning model to generate readable Tamil text, aiding preservation of historical documents, which is deploted on Streamlit
- Applied image segmentation with Contour Detection to identify and separate overlapping characters for accurate recognition
- Prepared low-level design documentation and delivered a live demo to the academic review panel of Tamil Virtual Academy

Disaster Information Aggregation Software | *HTML, CSS, React, Python, MongoDB* Aug 2024 – Nov 2024

- Built a web app for the Ministry of Home Affairs (NDRF) to aggregate real-time disaster data from social media, newsletters, and open platforms
- Developed and maintained the backend using Flask, integrating web scraping (BeautifulSoup) to extract disaster-related data and MongoDB for structured storage and retrieval
- Integrated backend with frontend components for seamless data flow and visualization
- Created an interactive Leaflet.js map to display real-time disaster locations and severity levels, with automated updates for affected regions and algorithms for efficient evacuation strategy suggestions
- Implemented an SOS feature to alert NGOs and emergency responders for rapid response

PUBLICATION

Integrating Visual Language Models for Enhanced Geospatial Analysis in Remote Sensing Aug 2025
16th IEEE International Conference on Computing, Communication and Networking Technologies (ICCCNT) *IIT Indore*

- Authors : Sankar Raja, Arjay J.G, Sheshwat, Dr. Krithiga R, and Dr. Shoba S
- Proposed a two-stage retrieval framework using CLIP-based dual encoders and an intermediate captioning step to improve alignment between visual and textual data
- Leveraged Vision Transformers (ViT) and multi-head attention to refine cross-modal embeddings for enhanced retrieval performance in remote sensing tasks

Technical Skills

Programming: C, C++, Core Java, JavaScript, Python
Technologies: REST API, Machine Learning, Image Processing
Cloud: AWS
Web: Next.js, Express.js, React, Node.js, Tailwind CSS, HTML, CSS, XML, JSON
Data Analysis: Power BI, Tableau, GNU Octave, Matplotlib, Seaborn
Databases: MySQL, Microsoft SQL Server, MongoDB
API Tools: Postman
CI/CD: Git
Libraries / Frameworks: NumPy, Pandas, OpenCV, Leaflet.js, Scikit-learn, TensorFlow, Keras, Streamlit

Certifications

Java Full Stack - Imarticus – Secured Grade: 92%
Databases and SQL for Data Science with Python - IBM – Secured Grade: 100%

Awards

1st Prize – Scire Festo, School Science Expo
Bronze Medal – SOF National Science Olympiad (2019-20), School Level