

# ARJAY J.G

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## Professional Summary:

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- Have good knowledge about Machine Learning, Image Processing and Full Stack Development
- Excellent understanding & hands on experience implementing Server Side Programming like Java.
- Have good technical knowledge in configuring Databases and Query Language
- Well-versed in AWS services, including AWS SageMaker for machine learning model deployment, AWS S3 for scalable data storage, AWS IAM for access control, AWS Amplify for frontend deployment and backend integration, AWS CloudWatch for performance monitoring
- Worked on Transformers and Vision Language Models and have a good understanding of deep learning architectures, attention mechanisms, and their applications in multimodal machine learning tasks
- Skilled in user interface development with database management and object-oriented programming
- Worked in Documenting the low level and high level design components.
- Excellent communication skills & interpersonal skills

## Education details:

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Qualification	Year of passing	Percentage	Education Board	School/College Name
SSLC (10th Std)	2020	87.0%	Tamil Nadu State board	The TVS School
CBSE (12th Std)	2022	92.4%	Central Board of Secondary Education	Chettinad Vidyashram
B.Tech (CSE)	2026	89.5%	VIT Chennai	VIT Chennai

## Technical Experience:

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Programming	C, C++, Core Java, Java Script, Python
Technology	Rest API, Machine Learning, Image Processing
Cloud	AWS
Web	HTML,CSS, XML, JSON
Database	MySQL, Microsoft SQL Server ,MongoDB
API	Postman
CI/CD	GIT

## Certifications:

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- ✓ Java Full Stack (Grade : 92%)
- ✓ Databases and SQL for Data Science with Python (Grade: 100%)

## Awards:

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

## Projects:

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### Project 1:      **Movie Review Website**

**Client:**            Academic Project  
**Role:**             Back end Developer, Web Application Deployment  
**Tech stack:**     HTML & CSS, JavaScript, MongoDB, Rest API, Vercel

#### Description:

This project is a movie review website designed to provide users with a comprehensive database of movie details. Users can log in to rate movies and write comments about them. The website also features filtering options, allowing users to search for movies based on their ratings. The entire application is deployed on Vercel.

#### Role:

- Built a Database to store the records of the movie details
- Worked with other project members and built a sprint plan (with tasks & activities assigned to each team member).
- Integrated APIs to collect and process movie reviews and user comments, sending data to an API endpoint and retrieving it for storage in the database
- Worked with frontend developers at top level.
- Monitor the status of development activity & resolve blockers faced by the team.
- Demonstrated the application working demo to the academic reviewing panel.
- Documenting the high level design components.

### Project 2:      **Automatic Inscription Converter**

**Client:**            Tamil Virtual Academy  
**Role:**             Machine Learning and Computer Vision Engineer  
**Tech stack:**     Python ,Keras ,Optical Character Recognition, Streamlit

#### Description:

A Tamil inscription converter that preprocesses, segments, and analyzes inscriptions using a machine learning model to generate readable Tamil text, enabling easier interpretation and preservation of historical documents

#### Role:

- Worked in noise reduction of the image by using Gaussian Blur & Median Filtering to remove unwanted artifacts
- Implemented image segmentation using Contour Detection to identify and separate overlapping characters.
- Worked with other project members and built a sprint plan (with tasks & activities assigned to each team member).
- Monitor the status of development activity & resolve blockers faced by the team.
- Presented a working demo of the application to the academic review panel of the government-affiliated institution and Documenting the low level design components.

**Project 3: Disaster-Information-Aggregation-Software**

**Client:** Ministry of Home Affairs, The National  
Disaster Response Force (NDRF)

**Role:** Backend Development, Web Scraping, Frontend Integration, Data Storage and Management

**Tech stack:** HTML & CSS, XML, Flask, BeautifulSoup, Leaflet.js, MongoDB,

**Description:**

A Web Application which collects information from various sources (social media, newsletters, open sources) about natural disaster in real time and presents the collected information in a visually convenient way on the website. It also features an interactive real-time disaster map that displays the locations and severity of disasters.

**Role:**

- Developed and maintained the backend of the Disaster Information Aggregation Software.
- Hosted and managed the web server for application deployment.
- Integrated backend functionalities with the frontend for efficient data flow.
- Implemented web scraping techniques to extract disaster-related information from various online sources.
- Designed and managed a MongoDB database for structured data storage and retrieval.
- Implemented automated updates to mark disaster-affected locations on the map by integrating Leaflet.js with OpenStreetMap at regular intervals.
- Developed an algorithm for efficient evacuation strategies based on real-time data.
- Implemented an SOS function to alert NGOs based on severity for rapid response.

**Publications:**

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**Research Paper title :** Integrating Visual Language Models for Enhanced Geospatial Analysis in Remote Sensing

**Authors :** Sankar Raja, Arjay J.G, Sheshwat, Dr. Krithiga R, Dr. Shoba S

- Published in the 16th International IEEE Conference On Computing, Communication and Networking Technologies (ICCCNT) held at IIT - Indore, Madhya Pradesh, India.

**Description:**

Designed 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 and multi-head attention to refine cross-modal embeddings, enhancing retrieval performance.