Sajith S

Date of birth: 04/08/2001 | **Nationality:** Indian | **Phone number:** (+91) 7806972892 (Mobile) |

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WORK EXPERIENCE

CAPESTART SOFTWARE PRIVATE LTD – NAGERCOIL, INDIA

Address 653, Pioneer Arcade, 629002, Nagercoil, India

ASSOCIATE SOFTWARE ENGINEER – 11/09/2023 – CURRENT

- Designed and developed end-to-end AI-driven applications, integrating deep learning and traditional ML techniques.
- Built and fine-tuned deep learning models for **object detection** and **image segmentation** tasks.
- Specialized in **Computer Vision (CV), Image Processing, Data Analysis, Data Preparation, Validation, and Data Visualization**.
- Hosted and fine-tuned **Large Language Models (LLMs)**.
- Developed document processing pipelines utilizing **NLP, Generative AI, Retrieval-Augmented Generation (RAG), and vector embeddings** to perform data extraction and question-answering tasks on large-scale medical and legal documents (up to 1000 pages), including invoices, insurance declarations, and medical records.
- Streamlined workflows by developing **AI agents** and implementing automated processes.
- Managed **CI/CD pipelines**, **MLOps workflows**, and **DBMS** to ensure efficient and scalable ML operations.
- Effectively managed **client communications**, fostering strong and lasting client relationships.

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MACHINE LEARNING INTERN – 22/02/2023 – 08/09/2023

- Executed **data element extraction** from **medical literature**, **multi-document summarization**, and **table data extraction** to support **pharmaceutical research**.
- Developed and fine-tuned **Optical Character Recognition (OCR) models** to **read text** and process **custom symbols** in medical documents.
- Designed and trained **Object Detection models** to accurately **identify and categorize sections** within **PDF documents**.
- Managed **data preparation and annotation** pipelines to enhance **model performance and accuracy**.

EDUCATION AND TRAINING

06/2019 – 04/2023 Chennai, India

BACHELOR OF ENGINEERING Anna University

Website https://www.annauniv.edu/ | **Field of study** Electronics and Communication Engineering | **Final grade** 8.24 | **Level in EQF** EQF level 6

06/2018 – 03/2019 Vavarai, India

12TH STANDARD St. Francis Higher Secondary School

Final grade 75% | **Level in EQF** EQF level 4

06/2016 – 03/2017 Vavarai, India

10TH STANDARD St. Francis Higher Secondary School

Final grade 93% | **Level in EQF** EQF level 3

LANGUAGE SKILLS

Mother tongue(s): **TAMIL**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	B2	B2	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Primary Skills

Deep Learning | Machine Learning | Computer Vision | Natural language Processing | GenAI | Prompt Engineering | MLOps | LLMOps | Backend Developement

Generative AI / Agentic AI / Prompt Engineering

RAG | langchain | LangGraph | CrewAI | HuggingFace | Zero-Shot | Few-Shot | Chain-of-Thought

Machine Learning / Deep Learning / Computer Vision / NLP

Tensorflow | PyTorch | Scikit-Learn | OpenCV | OCR | Numpy | Pandas | Matplotlib | Seaborn | Vector DB (Faiss, Chroma, Pinecone)

MLOps / LLMOps

Linux | Ollama | Unsloth | ZenML | MLflow | OpenAI (GPT, text-embedding, Wishper) | Anthropic Claude (Haiku, Sonnet, Opus) | Google (Gemini, Gemma) | Meta (LLama) | Mistral | GROQ

Cloud Services

AWS (Lambda, EC2, S3, DynamoDB, Bedrock, Textract) | Azure | GCP

Backend Development

Flask | Git | Docker | FastAPI | Elasticsearch

Programming Languages

Python | C++ | C | Bash | SQL | HTML | CSS

PROJECTS

04/2025 – 05/2025
ROB scoring for RCTs

Designed and implemented an AI-based solution to calculate Risk of Bias for Randomized Controlled Trials (RCTs), closely replicating the Cochrane ROB2 evaluation framework.

03/2025 – 04/2025
Structured Data Extraction from medical literatures using Generative AI

Extracted structured data from medical literature using Generative AI, capturing detailed clinical variables including population, subgroup, treatment arm (with grouping), time of assessment, efficacy outcomes, age metrics (mean, median, IQR, range, SD), gender distribution, severity levels (IGA), change-from-baseline (LS mean, mean %, SE, CI), p-values, and binary responder endpoints.

02/2025 – 03/2025
Citation Extraction and AMA Formatting from Medical Literature

Extracted metadata (title, abstract, study type, authors, year, journal, volume, article number, DOI) from medical literature using a hybrid pipeline that searches PubMed and Google Scholar APIs, and applies vision-based multimodal LLMs to extract citation data from PDFs when unavailable. Constructed standardized AMA citations from extracted information.

12/2024 – 02/2025
GenAI-Based Insurance Declaration Parser with AWS Deployment

Developed a Generative AI solution to extract structured data from insurance declaration documents, including policy details (number, dates, holder info), vehicle attributes (VIN, make, model, year, color), and coverage limits (liability, uninsured, underinsured, medical, personal). Implemented data preprocessing, code versioning via GitHub, prompt versioning using AWS DynamoDB, and serverless deployment on AWS Lambda.

10/2024 – 12/2024
GenAI-Based Insurance Cards Parser with AWS Deployment

Extracted structured information from insurance cards, including client details, document metadata (group number, member ID, policy number, payer ID), and provider information using Generative AI. Implemented data preprocessing, code versioning via GitHub, prompt versioning using AWS DynamoDB, and serverless deployment on AWS Lambda.

08/2024 – 10/2024
GenAI-Based Document Classifier with AWS Deployment

Built a AI based document classification system to categorize various document types including medical invoices, insurance cards, insurance declarations, and driver's licenses using Generative AI. Integrated OCR extraction via AWS Textract, performed data preprocessing, managed code versioning in GitHub and prompt versioning in AWS DynamoDB, and deployed the solution using AWS Lambda.

06/2024 – 08/2024
Generative AI Multi Agent Pipeline for Large-Scale Medical Invoice Parsing

Developed a GenAI Agent based pipeline to extract structured data from large medical invoice documents (~1000 pages) using agent-based methodologies with the CrewAI framework. The system automatically identified and segmented multiple invoices within a document, extracting key fields such as statement date, total amount due, insurance details, service breakdowns (charges, payments, adjustments), and client/provider information. Utilized OCR via AWS Textract, implemented data preprocessing, maintained code versioning in GitHub, prompt versioning in AWS DynamoDB, and deployed the solution using AWS Lambda.

04/2024 – 06/2024
MAS Validation Pipeline using Generative AI and Self-Hosted LLMs

Developed a multi-article summary (MAS) validation pipeline that compares LLM-generated summaries with expert-written ground truths to evaluate sentence flow and factual accuracy. Implemented scoring and justification mechanisms using a self-hosted Mistral-7B model on the Ollama framework.

01/2024 – 04/2024
Multi Article Summary Generation Using GenAI

Designed and deployed a GenAI pipeline to generate multi-article summaries from various medical literature types, including RCTs, case studies, and case reports. Leveraged Elasticsearch for indexing, LangChain for retrieval-augmented generation (RAG), and FAISS for vector embedding search. Integrated multiple LLMs (Gemini, Meta LLaMA, Anthropic Claude), containerized the application with Docker and FastAPI, and deployed it on AWS EC2. The solution enhances decision-making, reduces manual review time, and accelerates the discovery of critical insights for drug development.

11/2023 – 01/2024
Table QA

Developed a table question answering pipeline that extracts answers from tabular data in image format. Converted table images to HTML using a deep learning-based OCR model (PaddleOCR), parsed them into structured pandas DataFrames, and applied transformer-based Table QA models from Hugging Face to answer user queries accurately.

07/2023 – 11/2024
Deep Learning-Based Visual Section Segmentation in Medical Literature

Designed and trained deep learning models (RCNN, YOLO, RetinaNet) using frameworks like Detectron and PaddlePaddle to visually segment and crop structured sections from medical literature PDFs and present it in the right order, supporting single, double, and triple column layouts. Targeted visual components include text blocks, tables, figures, captions, titles, headings, headers, footers, and references. Labeled the training data manually using LabelStudio and trained models on AWS EC2 with GPU acceleration. Developed and trained a rotation correction model to detect and realign rotated tables and texts. Containerized the pipeline using Docker and deployed it on EC2, enabling precise visual section extraction to enhance downstream document processing in medical and pharmaceutical research.

04/2023 – 07/2023
OCR development

Trained a custom OCR model to extract text from images by developing text detection and extraction pipelines. Labeled datasets for text detection and recognition, and explored multiple OCR frameworks including Tesseract, EasyOCR, and PaddleOCR. Enabled GPU acceleration for faster training and inference, optimizing performance for real-world document image processing tasks.

Gesture-Based Tool for Sterile Browsing of Radiology Images (University project)

This project implements a gesture-based interface for surgeons to browse through radiology images without physical contact, maintaining a sterile environment in the operating room.

Link https://github.com/sajithsajith/a-gesture-based-application-for-browsing-images

Vege Buy - Smart Vegetable Identification and Billing Machine (University Project - Government Funded IEDC)

Vege Buy is an intelligent system that automates the process of identifying vegetables, weighing them, and generating bills on RFID. It's designed to run on a Raspberry Pi and utilizes computer vision, machine learning, and various hardware components to create a seamless vegetable purchasing experience.

Link https://github.com/sajithsajith/vege-buy

LIDAR-Enabled Smart Cane for Assisting the Visually Impaired (University Project)

The smart cane integrates LIDAR technology and a Raspberry Pi for real-time obstacle detection and autonomous navigation. Equipped with wheels and GPS, it assists users in reaching their destination safely. As a voluntary contributor to this project, My role focused on processing LIDAR signals to detect obstacles and control wheel movement, ensuring smooth navigation.

Link https://drive.google.com/file/d/10QskRODSGSAOB7onqHGig4DSEGH9VV-r/view?usp=sharing

IELTS Writing Task 2 Validation/Scoring (Hobby Project for personal use)

This project provides an automated validation tool for IELTS Writing Task 2 responses using Amazon Bedrock and a custom-trained language model.

Link https://github.com/sajithsajith/IELTS_writing_task2_validator

HONOURS AND AWARDS

16/08/2024
Superstar of the Quarter – CapeStart Software Private Ltd

Link https://drive.google.com/file/d/1rYH45vbrtDx_cRvdkhOu13PXPueYMBay/view?usp=sharing

10/03/2023
Best Student Researcher – Mar Ephraem College of Engineering & Technology

Link https://drive.google.com/file/d/1qGneBYaxGEO4IzHF4I7sB6RRqSgxM-UY/view?usp=sharing

10/11/2022
Paper presentation – St. Xavier's Catholic College of Engineering

Link https://drive.google.com/file/d/11D12AZRYTIidjzyuhlGRbsM_wFRwWn38/view?usp=sharing

10/11/2022
Circuit Debugging – St. Xavier's Catholic College of Engineering

Link https://drive.google.com/file/d/1FKP_23ushVXL8QVHznPTFs2woEnquDV3/view?usp=sharing

10/11/2022
Photoshop Contest – St. Xavier's Catholic College of Engineering

Link https://drive.google.com/file/d/1QkMi6DgUtv_CZs0MrWkwdknjwvhWPrkl/view?usp=sharing

27/05/2022
Paper Presentation – Mar Ephraem College of Engineering & Technology

Link https://drive.google.com/file/d/1n0ykRQs5h-l3Hj9KJve98xGa7NpWFwS6/view?usp=sharing

17/02/2025
Zoho Hackathon – Zoho

Link https://drive.google.com/file/d/1bDBVlTG0EPprAcLUrxYO9psAwpQPaHhZ/view?usp=sharing

25/03/2024
Generative AI: Prompt Engineering Basics – Coursera

Link https://drive.google.com/file/d/1GCxJScstr18iZK9DveXeeUnZ9Y9pQZQG/view?usp=sharing

23/02/2025
Marathon: Cancer Awareness 10K Dream Run – Kimshealth Hospital

Link https://drive.google.com/file/d/1pKttHg1tr0-GhrSzqvUwRbQBY43Du0Ne/view?usp=sharing

HOBBIES AND INTERESTS

Tech & Creative Pursuits

- Tinkering with Linux
- DIY Electronics Projects

Personal Pursuits

- Listening Music
- Playing Videogames
- Reading Books (Fantasy, Philosophy, Jokes)