

Samuel Jayasingh

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EDUCATION

Rajalakshmi Institute of Technology

B.Tech in Artificial Intelligence and Data Science
CGPA: 8.0/10 (As of 8th Semester)

Chennai, India
Nov 2021 – May 2025

Spartan Matriculation Higher Secondary School

Class 12, Computer Science
Grade: 82.5%

Chennai, India
Jun 2007 – May 2021

EXPERIENCE

Data Analyst & Machine Learning Intern

ZF Group - WABCO India Limited

Jul 2023 – Jan 2024
Chennai, India

- Designed and implemented a dynamic bus tracking system using mapping APIs and real-time telemetry data.
- Processed and engineered features from large-scale route data to enhance ML model resilience and performance.
- Developed automated Python dashboards for monitoring system metrics and latency across deployments.

AI Automation Intern & Software Developer

Vleafy Technologies

Jul 2024 – Dec 2024
Chennai, India

- Built conversational AI chatbots using LLMs and NLP for customer interaction automation.
- Automated backend workflows using Python and Gupshup APIs for production use cases.
- Integrated AI modules into full-stack web applications via RESTful services.

Software Engineer Intern - Artificial Intelligence

Spritle Software

Oct 2025 – Jan 2026
Chennai, India

- Designed agentic AI architectures evolving from single-agent systems to multi-agent orchestration with routing and delegation.
- Implemented RAG pipelines using FastAPI, ChromaDB, async embedding workflows, and multi-knowledge-base retrieval.
- Built API toolkits and PostgreSQL streaming query tools using Claude SDK and MCP servers.
- Developed automated vulnerability scanning and remediation workflows using modular agent orchestration.
- Improved industrial failure prediction models through dataset analysis and ML evaluation.

Junior Software Engineer – Artificial Intelligence

Spritle Software

Jan 2026 – Present
Chennai, India

- Researching, developing, and fine-tuning generative AI models including Transformers, Diffusion models, GANs, and VAEs for production-oriented use cases.

- Building and maintaining AI/ML pipelines using PyTorch, TensorFlow, and Hugging Face for NLP and generative systems.
- Developing LLM-powered applications and optimizing model performance through dataset processing, evaluation, and tuning.

PROJECTS

AI & Machine Learning Systems

Byte Pixels – AI Image Generation and Editing Tool | *React, Python, Firebase* May 2024 – Present

- Built a web-based AI image platform supporting generation, upscaling, inpainting, and background removal.
- Trained and integrated deep learning models for image enhancement and captioning workflows.
- Implemented scalable Python backend for real-time image processing pipelines.
- Designed responsive React UI for interactive editing and inference control.

Industrial Furnace Failure Prediction System | *Python, Airflow, MLflow* Jan 2026 – Present

- Built a machine learning pipeline to predict industrial furnace heating failures using sensor and operational datasets.
- Implemented anomaly detection using autoencoder architectures for early failure identification.
- Orchestrated data pipelines using Apache Airflow DAGs for automated ingestion, preprocessing, training, and evaluation workflows.
- Integrated MLflow for experiment tracking, model versioning, and reproducible training pipelines.

LLM & Agentic AI Applications

Byte Therapist – Mental Wellness Chatbot App | *React Native, Python, NLP* Apr 2025 – Present

- Developed an AI-powered mental wellness assistant with emotion-aware dialogue handling.
- Implemented sentiment analysis, journaling, and escalation-safe response mechanisms.
- Engineered secure backend systems ensuring privacy-preserving user data storage.

Smartle – Multi-Agent Knowledge Answering System | *Python, LLMs, RAG, Agents* Aug 2025 – Present

- Developed a multi-agent system capable of answering queries across heterogeneous knowledge bases.
- Implemented agent specialization for documents, APIs, databases, and web knowledge sources.
- Orchestrated agent collaboration using task routing, memory, and tool-based reasoning.

Llama 3 RAG for Web | *LangChain, Chroma, Python, GCP* Oct 2024

- Designed a Retrieval-Augmented Generation system integrating advanced language models with web-based information retrieval.
- Implemented semantic search using LangChain and Chroma vector database for document-grounded question answering.
- Deployed scalable inference services on Google Cloud Platform with optimized query latency.

Byte Synth – AI Video Summarization Tool | *Python, Gemini API, Flask* Mar 2024 – Present

- Implemented LLM-based video summarization for transcripts and visual highlights using multimodal AI.
- Integrated frame extraction, preprocessing, and Gemini API-driven summarization workflows.
- Built Flask API for handling video processing requests with asynchronous task queuing.

Developer Tools & MCP Servers

GitLab MCP Server | *Python, GitLab API, MCP Protocol* Jan 2026

- Built MCP server that transforms GitLab APIs into structured tools for AI clients to manage repositories programmatically.
- Implemented tools for repository management, issue tracking, branch operations, and CI/CD pipeline control.
- Enabled AI-driven GitLab workflow automation through standardized MCP protocol integration.

Stitch MCP Server | *Python, Google Stitch API, MCP Protocol* Jan 2026

- Developed local MCP server wrapping Google Stitch APIs into callable tools via stdio communication.
- Enabled AI-driven UI generation inside MCP clients by forwarding requests to Stitch's backend.
- Implemented standardized tool interfaces for seamless integration with AI agent systems.

WhatsApp MCP Server | *Python, Flask, SQLite, MCP Protocol* Aug 2025

- Created MCP server enabling AI agents to send and receive WhatsApp messages including text and media.
- Built custom Flask API with local SQLite database for secure message storage and retrieval.
- Implemented webhook handlers for real-time message processing and delivery confirmation.

SecuraAI – Agentic Vulnerability Scanner | *Python, LLMs, Security, CLI* Sep 2025 – Present

- Built an agent-driven vulnerability scanning system for application and infrastructure security analysis.
- Designed autonomous agents for threat modeling, CVE mapping, and automated remediation suggestions.
- Developed a CLI tool enabling automated security scans and structured vulnerability reports.

System Utilities & Scripts

Universal Windows Debloater | *PowerShell* Jun 2023

- Developed lightweight PowerShell script to remove pre-installed Windows 10/11 bloatware applications.
- Implemented telemetry disabling and system decluttering features for improved user experience.
- Created automated deployment scripts for batch processing across multiple Windows installations.

TECHNICAL SKILLS

Languages: Python, C++, SQL, TypeScript, JavaScript, HTML/CSS, PowerShell

AI/ML: TensorFlow, PyTorch, Scikit-learn, Hugging Face Transformers, Autoencoders, Diffusion Models, GANs, VAEs

LLMs & Agentic AI: RAG, LangChain, ChromaDB, Agentic AI Systems, Prompt Engineering, Fine-Tuning, Google ADK, MCP Protocol

NLP: BART, T5, spaCy, Sentiment Analysis, Named Entity Recognition, Text Summarization

MLOps: MLflow, Apache Airflow, Model Evaluation, Experiment Tracking, Pipeline Automation

Edge AI & Robotics: Edge AI, ROS2

Web/Backend: FastAPI, Flask, Node.js, React, React Native, REST APIs, WebSockets

Data Tools: Pandas, NumPy, Matplotlib, Plotly, Power BI, Excel

Databases: MySQL, PostgreSQL, MongoDB, Firebase, Supabase, SQLite, ChromaDB

Cloud/DevOps: Google Cloud Platform, Docker, Git, GitHub Actions

APIs & Integration: GitLab API, Google Stitch API, Gemini API, Gupshup API, WhatsApp API

OS: Linux, Windows