SWAMINATHAN S

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EDUCATION

Madras Institute of Technology, Anna University, Chennai — **Aug 2023 – Present**
B.E. Electronics and Communication Engineering — **CGPA: 7.30**

Sowdambikaa Matric Boys Hr. Sec. School, Thuraiyur — **2021 – 2023**
Higher Secondary Course – Computer Science — **Percentage: 97.17**

EXPERIENCE

CREDENTIALS

AI & CLOUD VIRTUAL INTERN — **Aug – Sep 2026**
IBM SkillsBuild – Edunet Foundation (AICTE) — **GITHUB**

- **Developed** PERITIA, an AI-powered interview trainer that analyzes resumes, skills, experience and job descriptions to deliver personalized interview preparation across technical, behavioral and HR rounds.
- **Implemented** it through a RAG-based agentic pipeline with semantic retrieval, context-aware question generation, structured answer evaluation and scoring, personalized feedback, and performance tracking, used by **350+ users**.
- **Worked** with IBM Cloud technologies across Generative AI, Agentic AI, Machine Learning, RAG, chatbots, and Quantum Computing, leveraging IBM foundation models and cloud-based AI workflows.

Tech Stack: React, TypeScript, FastAPI, FAISS, IBM watsonx.ai, LLaMA 3.3 70B

PROJECTS

VISONIC — Identity-Preserving Speech-to-Face Generation — Jul 2026 – Present | GITHUB

- Developed a speech-to-face generation pipeline using AST speech embeddings and ArcFace face identity embeddings, and trained an MLP to align speech representations with facial identity space.
- Integrating the trained MLP with the Arc2Face diffusion model for identity-guided face generation and implementing LoRA fine-tuning to improve identity preservation and visual quality.

Tech Stack: Python, PyTorch, Transformers, Diffusers, Librosa, Streamlit, MLP, AST, ArcFace, Arc2Face

ASK&ACT — Agentic AI Orchestration & Specialized Multi-Agent Engine — Apr – Jun 2026 | GITHUB

- Built a modular agentic AI platform with specialized workflows for code review, stock intelligence, market research, news intelligence, YouTube content analysis, and general-purpose AI interaction.
- Designed graph-based multi-agent orchestration using specialized agents, tools, and data sources with a React frontend and FastAPI backend to process task-specific inputs and synthesize unified responses.

Tech Stack: Python, React, FastAPI, LangGraph, LangChain, Ollama (Qwen2.5 7B), yfinance

CLIP&CODE — Multimodal UI Parsing & Code Generation Engine — May – Jul 2025 | GITHUB

- Built a multimodal design-to-code platform that analyzes UI screenshots and generates reusable React components from their visual layout, structure, and interface elements.
- Designed a two-stage AI pipeline that uses a vision model for UI understanding and a code-generation model to generate React code from UI designs, with VS Code integration.

Tech Stack: React, TypeScript, FastAPI, Ollama (Qwen2.5-VL 3B, Qwen2.5-Coder 7B), VS Code Extension API

ARCHIVA — Academic Record & Performance Management System — Jul – Aug 2024 | GITHUB | **LIVE**

- Built a browser-based academic record management system for semester-wise grade tracking, GPA/CGPA calculation, arrear monitoring, and academic report generation.
- Developed and deployed a client-side platform supporting report download, local session recovery and sharing capabilities, actively used by **140+ students** across multiple semesters.

Tech Stack: HTML5, CSS3, JavaScript, jsPDF, PDF.js, html2canvas

TECHNICAL SKILLS

- **Languages:** Python, C++, JavaScript, TypeScript, SQL
- **Software Development:** React, FastAPI, REST APIs, HTML5, CSS3, MySQL
- **AI / ML:** Machine Learning, GenAI, LLMs, Agentic AI, Multi-Agent Systems, RAG, Multimodal AI
- **AI Frameworks & Libraries:** PyTorch, Transformers, Diffusers, LangGraph, LangChain, FAISS, Ollama, Streamlit
- **Cloud & Developer Tools:** IBM Cloud, IBM watsonx.ai, Git, GitHub, VS Code, CI/CD, Agile/Scrum
- **Core CS:** DSA, OOP, DBMS, OS, Computer Networks, LLD

ACHIEVEMENTS & LEADERSHIP

CREDENTIALS

- **Problem Solving:** Solved **300+ problems** on LeetCode in Data Structures & Algorithms and MySQL.
- **Certifications:** Agentic AI Foundations Associate – Oracle ; Walmart Global Tech Software Engineering Job Simulation – Forage ; Full Stack Developer, Cloud Computing & DevOps Tools - Simplilearn ; Cybersecurity - Cisco.
- **Technical Leadership:** Organized **QUANTuMIT**'s quantum technical workshop at Chakravyuha'25 and **TEDcMIT**'s INNOVATE'25, coordinating speaker tracks and event logistics for **150+ attendees** at Madras Institute of Technology.