SUKRUTH MOTHAKAPALLY

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Work Experience

AI Software Engineer — Feb 2025 - Present
Predicta.bio, Boston, MA (Python, LLMs, FastAPI, MongoDB, Azure, Airflow)
- **Founding engineer** owning **end-to-end** development of **3 microservices** with **multi-agent system** for an AI-driven **MVP.**
- Contributing to a data **orchestration pipeline** (Graph/Vector DB), streamlining Protein synthesis and **predictive analytics**.

AI Software Engineer — Jan 2024 - Aug 2024
PipeIQ.ai, Palo Alto, CA (Python, LLMs, RAG, FastAPI, AWS, Postgres, Node.js, OpenAI)
- As part of founding team, collaborated directly with **CEO** in a **0→1** initiative to design and develop **4 microservices** for the **MVP** using FastAPI/Node.js/AWS Lambda/Kafka/Docker, accelerating time-to-market by a **quarter**.
- Contributed to engineering a **multi-agent AI system** (RAG/LangChain/Selenium) for **automating** and personalizing email generation, lead acquisition, and campaign creation, driving **10+** customers and increasing sales **conversions**.
- Developed an **AI chatbot** (RAG/Cache/FAISS/WebSocket) serving as a Customer **Onboarding Assistant**, delivering real-time sales insights and slashing setup time from **hours to minutes**.
- Designed **8** database schemas for sales-marketing workflows and led **agile** migration from monolith to microservices, integrating **AWS** services with **CI/CD** pipelines via GitHub Actions/Terraform, streamlining weekly **release cycles**.

Graduate Teaching Assistant — Jan 2023 - Dec 2024
Northeastern University, Boston, MA (Python, ML, Object Oriented Programming)
- **Co-created** and graded assignments, mentoring **40+** students in **Data Structures, Algorithms** and **Data Science** courses.

Systems Engineer — Dec 2020 - June 2022
Infosys (**Intel**), Bangalore, India (Python, C++, MySQL, CI/CD, Automation, Testing)
- Automated Intel **GPU/SSD** driver deployments via C++ CLI tools and **Ansible** on Linux, configuring **10K+** enterprise systems.
- Wrote **50+** SSD firmware **test cases** and built a Python **automation** library, boosting test execution throughput by **15%**.
- **Re-engineered** driver updates using Python/Shell **parallel scripting**, slashing deployment time by **30%** for **1M+** users.
- Optimized **CI/CD** pipelines (Jenkins/Git) with automated unit/integration tests, reducing driver build failures by 7**%**.

Full-Stack Developer Intern — Feb 2020 - Mar 2020
Infosys, Mysore, India (JavaScript, MERN, Agile)
- Developed **4** REST APIs (Express.js/MongoDB) using aggregation pipelines and **indexing**, enhancing latency by **10%**.
- Built **real-time** analytics dashboard (React/D3.js) with code-splitting and **DOM** optimization, reducing load time by **9%**.

Software Developer Intern — Jul 2018 - Aug 2018
Bosch, Bangalore, India (Python, Node.js, REST, AWS, Docker)
- Enhanced microservices with **JWT** authentication and **session** management, improving API security for shipment tracking.
- Implemented **Redis caching** and optimized SQL queries using indexing, reducing data retrieval time by **30%**.

Personal Projects

Personalized AI Job Tracker – Full-Stack App (Python, LLM, FastAPI, JS, Postgres, AWS, Docker, Prefect)
- Developed a **Chrome extension** with **multi-agent AI** microservices to automate job tracking, deployed on AWS with Docker.

Custom LLM & GPT Fine-Tuning with Multi-Agent AI (PyTorch, LLM, LoRA, RLHF, NLP, Deep Learning)
- Engineered a GPT based LLM with **AI agents** using **LoRA**, **RLHF**, and instruction backtranslation for aligned responses.

Audio Emotion Classifier with Deep Learning and Parallel Computing (Python, PyTorch, CNN, NLP)
- Built an audio emotion classifier using **DL**, **NLP**, and **parallel** computing to efficiently detect complex emotion patterns.

AI-based Stack Overflow Full-Stack App (Python, LLM, Airflow, Docker, FastAPI, CI/CD, GCP)
- **Led** a team of **3** to build a Dockerized **full-stack app** integrating **AI agents** into **Stack Overflow**, deployed on GCP.

Technical Skills

- **Languages | Databases**: Python, Java, JavaScript, SQL **|** PostgreSQL, MySQL, NoSQL (MongoDB, Redis), Elasticsearch.
- **AI | LLM:** Multi Agents System, RAG, function call, prompting, fine-tuning, LangChain, LlamaIndex.
- **ML | NLP:** TensorFlow, Sklearn, PyTorch, CNN, GAN | BERT, Transformers, Hugging Face.
- **Backend:** Flask, FastAPI, Django, Node.js, RESTful APIs, GraphQL, Microservices, Serverless, SoA.
- **Cloud**: AWS (SQS, Lambda, ECS, IAM, S3, EC2, RDS, EBS), GCP (CloudSQL, Pub/Sub), Azure.
- **CI/CD | Parallelization**: Git, GitHub Actions, Jenkins, Terraform, Docker **|** GPUs, Cuda, Multi-threading, multi-processing.

Education

Northeastern University, Boston, MA — Dec 2024
Master of Science in Computer Software Engineering — 3.8 / 4.0
Relevant Courses: Data Structures and Algorithms, Data Science, Advances in LLMs, Cloud, Big Data, Parallel Computing.

Visvesvaraya Technological University, Bangalore, India
Bachelor of Engineering in Computer Science and Engineering