

Swebert Correa

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EDUCATION

• Georgia Institute of Technology

Atlanta, Georgia

- *Master of Science in Computer Science*

Aug 2024 - May 2026

Coursework: Machine Learning, Advanced Database Systems, Securing the Internet Infrastructure, Computer Networks

Graduate Teaching Assistant for Natural Language Processing

• College of Engineering, Pune (COEP)

Pune, India

- *Bachelor of Technology in Computer Engineering; GPA: 9.05/10.0*

Aug 2018 - Oct 2022

Coursework: Artificial Intelligence, Data Science, Database Systems, Distributed Systems, Statistics for Finance

SKILLS

- **Languages:** Python, C, C++, TypeScript, JavaScript, Go (Golang), SQL, Bash (Linux Shell Scripting)
- **Frameworks:** Django, Conjure, JAX, PyTorch, TensorFlow, HuggingFace, Spark, Flink, Kafka
- **Tools:** Elasticsearch, Prometheus, Grafana, Jenkins, CircleCI, Git, Jupyter, Postgres, Plotly
- **Platforms:** Kubernetes, Docker, AWS, GCP, RHEL, Fedora, Debian, Ubuntu

PROJECTS

• Music Generation AI | *Genetic Algorithms*

- Implemented a genetic algorithm to generate new melody variations based on prior inputs and dataset
- Devised a model to calculate fitness score based on user's previous acceptances and rejections
- Developed virtual synth pad as HCI interface for translating the genomes to and from human format

• Multimodal Conversational Agent with RAG | *Large Language Models*

- Built multimodal chatbot using LLMs with a RAG pipeline powered by Vesuvius vector DB for context
- Fine-tuned using LoRA and optimized dialogue quality with reinforcement learning for 92% user rating
- Deployed the system using docker and integrated Ollama for scalable multimodal interactions

• Multi-Task Vision System for Image Recognition and Synthesis | *Computer Vision*

- Used YOLO for real-time object detection and ViT/CLIP for multimodal classification with 95% accuracy.
- Developed a GAN-based module for generating high-quality, photorealistic images and augmenting datasets
- Optimized feature extraction with CNN mixture models and integrated OpenCV for real-time processing

PUBLICATION

• Human-Computer Music Co-Production Using Genetic Algorithms

Best Paper Award

IEEE International Conference on Computing, Communication, Security and Intelligent Systems

2022

EXPERIENCE

• Rakuten Symphony

Pune, India

Associate Software Engineer

Jun 2022 - Jul 2024

- **Metadata Management:** Strategically maintained and scanned millions of rows for life-cycle management, finding missing chunks, performing RBAC, etc. utilising means like stored procedures.
- **Cluster Manager:** Co-developed the orchestrator service with team-lead which included creating heuristic algorithms to predict the upcoming load on service fleet and allocate resources accordingly
- **Micro-service Diagnostic Utility:** Collated data from various micro-services to determine the number of in-flight IOs on all the distributed volume managers of the block storage using pub/sub model

• Citi Bank

Pune, India

Technical Summer Analyst

May 2021 - Jul 2021

- **DevOps:** Created CI/CD pipeline using PowerShell to email results to all stakeholders with single click

- **Optimization:** Leveraged various wait strategies to achieve a 5x reduction in runtime from 30min to 6min