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 Veaviate 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