

# Swebert Correa

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## EDUCATION

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- **Georgia Institute of Technology** Atlanta, Georgia  
*Master of Science in Computer Science* Aug 2024 - May 2026  
*Coursework: Computer Networks, Machine Learning, Securing the Internet Infrastructure*  
*Graduate Teaching Assistant in 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: Distributed Systems, Operating Systems, Computer Networks, Database Systems, Artificial Intelligence*

## EXPERIENCE

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- **Rakuten Symphony** Pune, India  
*Associate Software Engineer* Jun 2022 - Jul 2024
  - **Data Rebuild and Resync:** Led the design and development of data recovery subsystem for object storage by integrating erasure-coding, creating disk-sets and scanning thousands of files across disks
  - **Server-Side Encryption:** Engineered the mechanism to encrypt objects at rest using the customer-provided key, without disrupting replication of the erasure-coded objects across heterogeneous sites
  - **Cluster Manager:** Co-developed the event-loop based orchestrator service of object storage with team-lead to manage the life-cycle of different services like data and metadata stores, and gateways
  - **Backup and Garbage Collection:** Resolved memory and reference leaks in differential snapshots
  - **Microservice Diagnostic Utility:** Collated data from various microservices to determine the in-flight IO operations on all distributed volume managers of the cloud native block storage via pub/sub model
- **Citi Bank** Pune, India  
*Technical Summer Analyst* May 2021 - Jul 2021
  - **DevOps:** Aided in creating a continuous integration pipeline using PowerShell along with some internal tools, allowing to obtain test results emailed to all the stakeholders with a single click
  - **Optimization:** Leveraged various wait strategies to achieve a 5x reduction in code runtime

## PROJECTS

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- **Ext2 File System for MIT xv6 OS** | *Operating Systems, C*
  - Developed Ext2 file system, implementing buffer cache management, tree-based searching and logging
  - Updated ATA interface driver to utilize the secondary bus to enable data transfer with the Ext2 disk
  - Implemented a Virtual File System with new file-system APIs, updating corresponding syscalls
- **Intel 8085 Simulator** | *Compilers, C*
  - Implemented an assembler to compile the 8085 assembly instructions into machine code
  - Developed a virtual processor to simulate the ISA and run the machine code with step-wise execution
  - Created a ncurses terminal UI to display the contents of registers and selected memory-arena
- **Music GenAI** | *Machine Learning, Python, Svelte*
  - 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

## PUBLICATION

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- **Human-Computer Music Co-Production Using Genetic Algorithms** Best Paper Award  
*IEEE International Conference on Computing, Communication, Security and Intelligent Systems* 2022

## SKILLS

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- **Languages:** C, C++, Python, Java, Go, x86 Assembly, TypeScript, Bash (Linux Shell Scripting), SQL
- **Technologies:** Kubernetes, Docker, Postgres, GDB, Valgrind, Nginx, React, Flask, Numpy, PyTorch, AWS