

# Swebert Correa

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## EDUCATION

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- **Georgia Institute of Technology** Atlanta, Georgia  
*Master of Science in Computer Science; GPA: 4.0/4.0* Aug 2024 - May 2026  
*Coursework: Computer Networks, Distributed Computing, Database Implementation, Machine Learning*  
*Specializing in Computing Systems; Graduate Teaching Assistant*
- **College of Engineering, Pune (COEP)** Pune, India  
*Bachelor of Technology in Computer Engineering; GPA: 9.05/10.0* Aug 2018 - Oct 2022  
*Coursework: Operating Systems, Distributed Systems, Computer Networks, Database Systems, Compilers*

## SKILLS

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- **Languages:** C, C++, Python, Java, Go, x86 Assembly, TypeScript, Bash (Linux Shell Scripting), SQL
- **Technologies:** Kubernetes, Docker, Postgres, AWS, Azure, GDB, ASan, React, Django, Numpy, Git, Jenkins

## EXPERIENCE

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- **Rakuten Symphony** Pune, India  
*Associate Software Engineer | C/C++, Python, Kubernetes, PostgreSQL* Jun 2022 - Jul 2024
  - Engineered an in-house object storage system delivering ~ 70% feature parity with AWS S3
  - **HTTP Streaming Server:** Developed an asynchronous event-based streaming HTTP server in C to provide object store REST APIs like GetObject, PutObject, etc. while handling MIME and URL encoding
  - **Data Integrity and Recovery:** Efficiently scanned thousands of files across hundreds of disks to regenerate data lost due to failures or partitions by employing erasure-coding and load balancing with disk-sets
  - **Certificate Management:** Managed the generation and automated publishing of TLS certificates for all gateway microservices running microhttpd server and the certificate authority ensuring minimal downtime
  - **Server-Side Encryption:** Engineered the mechanism to encrypt objects at rest using the customer-provided key, without disrupting active-active replication of the erasure-coded objects across heterogeneous sites
  - **Cluster Manager:** Collaborated with team lead to implement RPC-based orchestrator featuring a custom event loop enabling microservice lifecycle management such as data servers, metadata servers and gateways
- **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

## PROJECTS

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- **Mini Internet** | *Computer Networks, Free Range Routing*
  - Managed router interface subnet assignments, enabling efficient IP addressing and network segmentation
  - Administrated OSPF and BGP for dynamic routing along with incorporating RPKI and ROV filtering
- **SDN Load Balancing using Inverted Bloom Filter** | *Computer Networks, P4, Python*
  - Designed an SDN of a city-wide network using P4 to simulate traffic management and network analysis
  - Developed IBLT-based load balancer for connection management, resource utilization and scalability
- **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
- **BitTorrent Client** | *Computer Networks, Python*
  - Implemented bittorrent protocol over TCP with algorithms like optimistic unchoking and rarest piece first
  - Developed peer discovery and connection management over HTTP & UDP to load balance socket streams