# Raphael Sosa

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## PROFILE

Software Engineer with a strong foundation in data structures, algorithms, and full-stack web development, combined with experience in cloud infrastructure, performance monitoring, and automation. Proven ability to design, build, and maintain scalable and fault-tolerant systems using modern cloud services such as Google Cloud Platform (GCP) and Firebase. Adept at troubleshooting, optimizing system performance, and automating infrastructure processes to enhance operational reliability. Passionate about Site Reliability Engineering principles and ensuring uptime for critical systems.

## EDUCATION

Pace University, Seidenberg School of Computer Science and Information Systems (New York, New York)
Bachelors of Science, Computer Science | GPA: 3.03

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, Java, TypeScript
**Frameworks & Libraries:** React, Next.js, Tailwind CSS
**Databases:** Firestore, MySQL, NoSQL, PostgreSQL
**Tools:** Git, VS Code, IntelliJ, Eclipse, Replit
**Cloud Services:** Google Cloud Platform (GCP), Firebase, AWS S3
**Systems & DevOps:** Performance monitoring, debugging, automation scripting, API development, containerization (Docker), microservices architecture
**Operating Systems:** Windows, macOS, Linux (basic)

## ACADEMIC PROJECTS / PERSONAL PROJECTS

**Auto-Healing Microservices Architecture** — Python, Docker, GCP, Monitoring Tools
- Designed and developed a distributed microservices architecture on Google Cloud with built-in self-healing mechanisms to ensure system resilience and minimize downtime.
- Automated failure recovery through container restarts, load balancing, and health checks using GCP tools, ensuring seamless service availability.
- Applied chaos engineering principles to simulate failures and test system recovery processes, improving system uptime and fault tolerance.
- Leveraged Google Cloud Monitoring to set up performance metrics, alerting, and monitoring, enabling proactive response to system anomalies and bottlenecks.
- Implemented auto-scaling policies and load balancing to optimize resource utilization and ensure system stability under fluctuating traffic loads.

**Incident Tracker Web App** — React, FastAPI, PostgreSQL, SQLAlchemy, JWT Auth
- Built a highly available and fault-tolerant incident tracking platform with JWT authentication to secure user access and protect sensitive data.
- Developed RESTful APIs with SQLAlchemy for scalable incident and comment management, ensuring rapid response and easy maintenance of critical system components.
- Integrated real-time updates using WebSockets and long-polling to provide immediate incident visibility to users, improving response time and operational efficiency.
- Designed role-based access control (RBAC) to ensure that only authorized users can modify incidents, aligning with best practices for system security and data integrity.
- Incorporated automated testing and load testing to ensure system reliability under high load, simulating production conditions for stress testing.

**Cloud Cost Tracker App** — React, GCP Billing API, Firebase, Firestore (in progress)
- Developed a cloud cost monitoring tool leveraging the Google Cloud Billing API to track usage patterns and

optimize cloud resource allocation in real time.
- Integrated Firebase Authentication for secure user management and Firestore for persistent storage of historical cost data, ensuring system scalability and data integrity.
- Created interactive dashboards with real-time visualization to detect unusual cost spikes and trends, enabling proactive budget management and cost optimization.
- Implemented alerting systems using Google Cloud Pub/Sub to notify users of significant cost anomalies, minimizing financial risk through early intervention.
- Designed the app with a focus on scalability, ensuring the system could handle growing datasets and expanding usage without compromising performance.

**E-Commerce Store** — React, Firebase Auth, Stripe API
- Built a full-stack e-commerce site featuring real-time cart management, order history, and admin dashboard.
- Focused on performance optimization and backend scalability to handle high-traffic scenarios.
- Implemented real-time updates and integrated Stripe API for secure payments, ensuring high availability and reliability.

## PROFESSIONAL EXPERIENCE

Client Systems & Operations Assistant | H&R Block  *(February  2025 – Apr 2025)*
- Troubleshot and resolved internal system and software issues for over 20 team members, improving operational efficiency.
- Automated portions of the intake and scheduling process, reducing response time by 35%.
- Enhanced system reliability by tracking workflows and generating performance reports to identify bottlenecks and optimization opportunities.

Software Engineer | Freelance Projects *(2023 – Present)*
- Designed, developed, and deployed cloud-native applications using React, Firebase, and Google Cloud Platform (GCP), ensuring system performance and scalability.
- Optimized CI/CD workflows and improved deployment performance for faster updates and system resilience.
- Automated infrastructure tasks and provided troubleshooting support to enhance system uptime and reliability.

Database Administrator Intern | United Parcel Service *(May 2021 – Aug 2022)*
- Supported and optimized critical internal databases, improving data retrieval performance by enhancing query efficiency and data indexing.
- Contributed to system monitoring scripts for real-time anomaly detection and alerts, improving database reliability and performance.

## ADDITIONAL EXPERIENCE

- Service & Engagement Executive Team Leader | Target *(May 2023 – Aug 2024)*
- Receptionist | Pace University Counseling Center *(Jan 2022 – Sep 2023)*

## Certifications

- **Google Cloud Essentials** – Google Cloud Skills Boost (Badge Earned)
- **Python**– freeCodeCamp
- **Java**– freeCodeCamp
- **Javascript**– freeCodeCamp