HIROSHI OBATA

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EDUCATION

University of Southern California, *Master of Science in Computer Science*, Los Angeles, CA   August 2022 - December 2024
The University of Tokyo, *Master of Information and Communication Engineering*, *Japan* / GPA: 3.9   March 2009
Keio University, *Bachelor of Engineering, Electronics and Electrical Engineering*, *Japan* / GPA: 3.5   March 2007

SKILLS

- Programming Language: (C++, Java, Python, JavaScript, TypeScript, HTML, CSS, JSON, SQL)
- OS: Linux, Windows
- Cloud & Container Technologies: AWS (VPC, IAM, Route53, S3, EC2, API-Gateway, Transit Gateway, Direct Connect, RDS, Lambda, Direct Connect Gateway, Step Functions, Cloud Watch, SQS, Serverless), Docker, IaC
- Web Technologies: Bootstrap, Node.js, Flask, Angular, React
- Network devices: Cisco, F5, Juniper, Firewall, Next-Generation Firewall
- VoLTE, IMS, EPC, 3GPP/GSMA, TCP/IP, DHCP, DNS, CCNP, CCNA, BGP, OSPF, MPLS, QoS, VLAN, IPSec, VPN, Network security, System architecture design, RESTful API

EXPERIENCE

Progummy Inc., Tokyo, Japan
Software Engineer   May 2023–Aug 2023
An innovative startup specializing in providing a programming education platform.
Customized from Scratch, a visual programming
language specifically tailored for beginners. Services focus on introducing programming through a visually driven approach.
The platform's foundation lies in tens of thousands of lines derived from Scratch's original code.
Skills: Docker, GitHub, Cloud Firestore, Firebase, JavaScript, TypeScript, React.js, Front-End Development

- Oversaw continuous platform enhancements through rigorous bug fixes.
- Prioritized and executed refactoring based on valuable user feedback and requests.

JFE Engineering Corporation, Tokyo, Japan
Network and Cloud Engineering Manager, ICT Center   April 2017–July 2022
An engineering firm based in Japan with 9,000 employees/ Revenue of ¥485.7 billion/ 20 overseas affiliates
Skills: Python, JSON, IaC, AWS, Wireshark

- Headed a project, built a team to integrate a private cloud infrastructure that 9,000 employees use, and transferred 300 Linux/Windows servers from a data center to AWS with a $4.5mio budget to reduce system annual operating costs by $1mio. Implemented serverless solutions using AWS Lambda wherever possible and automated the nightly shutdown of EC2 instances through bash/Python scripts. This strategy significantly reduced operation costs, equivalent to eliminating five person-months of manual effort.
- Designed system architecture on AWS with a focus on Site reliability, Data Leakage Prevention, Robustness, Scalability, and Availability including end-to-end performance. Responsible for the entire process, from the grand design to implementation.
- Managed multi-function departments and built more than 30 serverless systems with API-Gateway, Step Functions, Lambda, Python, and RDS (SQL) to refine a management procedure for construction site efficiency.
- Acted as an AWS system administrator, providing 24/7/365 support for system downtimes and security incidents. Defined a Business Continuity Plan (BCP) workflow and revamped methods to switch all systems to backup infrastructure within half a day.

NTT DoCoMo, Inc., Tokyo, Japan
Network Engineer   April 2009–March 2017
A leading telecommunications carrier: Serving a customer base of over 100 million. Revenue of ¥4.65 trillion.
A workforce of 10,000 employees.
Skills: VoLTE, IMS, EPC, 3GPP/GSMA, TCP/IP, DHCP, DNS, CCNP, BGP, OSPF, MPLS, QoS, VLAN, IPsec, NAT, Network Security
Network devices: Cisco, Juniper

- Following the observed traffic patterns during the Great East Japan Earthquake, I formulated a predicted traffic model for emergency situations. Using this model, I developed a system that automatically adjusts packet priority control logic with registration signal and incorporated QoS control., ensuring the seamless rerouting of 200,000 user calls even if a data center collapsed. For this groundbreaking achievement, I received an executive award among 1,000 engineers.
- Responsible for troubleshooting customer networks 24-365. Trouble resolution based on system logs, packet loss data from packet capture, and codec information with Wireshark.

- Over three months, improved software quality for IP-based IMS infrastructure testing by more than 1,000 items. Planned a test and orchestrated deployments for a large-scale telecom infrastructure that 60 million customers use.
- Collaborated with GSMA and 3GPP to define and incorporate specifications for voice QoS control into global standards, optimizing mobile network traffic specifically pertaining to LTE and VoLTE (Voice over LTE).

Projects

MineSweeper Game
- Implementing a MineSweeper game based on the MVC (Model-View-Controller) pattern using Java.

Ticket master application with Angular
- This application is a browser-based system built to search and display event details leveraging the Ticketmaster API. It allows users to search for events and conveniently view combined information such as ticket details, venue information, and artist details. The system is structured into three core components: a browser frontend, a Node.js backend, and the Ticketmaster server.
  Skills: Frontend: Angular, JavaScript, TypeScript, CSS / Backend: Node.js, JavaScript, API

Ticket master application with Swift
- This application is a mobile-based system tailored for iOS devices to search and showcase event details leveraging the Ticketmaster API. It empowers users to search for events and seamlessly view integrated information like ticket details, venue information, and artist specifics. The system is structured into three primary components: an iOS app interface, a Node.js backend, and the Ticketmaster server.
  Skills: Frontend: Swift, UIKit (or SwiftUI if you're using that for UI), iOS SDK / Backend: Node.js, JavaScript, API

Tetris Game
- Skills: HTML, CSS, and GitHub.
  Led a 3-person team as the Team Leader. Managed tasks and assignments. Set project goals and timelines. Organized role delegation among team members.

RESTful API server built using Go that interacts with a PostgreSQL database
- Skills: Go, Gorilla Mux for routing, PostgreSQL, Docker
  RESTful API server built using Go that interacts with a PostgreSQL database. It provides functionalities to create, read, update, and delete key-value pairs (items) and authenticate users.