

Uyo Ko

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Work Experience

Indeed

Tokyo Japan

Software Engineer

November 2021–Present

- Worked in the candidate matching system backend team (team of approx. 12).
- Designed and developed the candidate recommendation system for employer which support 8 different countries.
 - Worked on the inference server to improve the scalability by supporting 3x numbers of candidates from the storage perspective.
 - Worked on the job feature service to improve the stability of the service and make it scale to support 14x more traffic volume.

Google

Munich German

Software Engineer

August 2020–November 2021

- Worked in Munich Android Auto Development team (team of approx. 8).
- Designed and developed vehicle-to-phone connectivity solution.
 - Built next generation vehicle-to-phone connectivity system software.
 - Built next generation projecting solution for android phone.

Goldman Sachs

Tokyo Japan

Software Engineer, Associate

February 2018–August 2020

- Worked in the Equity Engineering Group (team of approx. 8).
- Improved system latency and scalability.
- Main projects:
 - Built key components for next generation sequencer based ultra-low latency trading platform.
 - Worked as an SRE to provide L3 support for electronic trading platform.

Sony

Tokyo Japan

Linux system R&D Engineer

April 2016–February 2018

- Worked in the Base System R&D Department, Linux kernel R&D Section (team of approx. 6).
- Held a team member position at the AI/Robotics Business Unit, System Software Development Section (team of approx. 20).
- Performed parallel work on two main projects
 - Designed and developed a secure application framework of embedded Linux for next generation IoT devices and robotics.
 - Linux kernel/driver development for both current and next-generation embedded system platform.

Education

The University of Tokyo

Tokyo Japan

M.S. in information and communication engineering
Graduate School of Information Science and Technology

April 2014–March 2016

Dong Hua University

Shanghai China

B.Eng. in electrical engineering and automation
Department of Electrical Engineering

September 2009–July 2013

Selected Projects

Candidate matching system backend development.

Java, Kotlin

Candidate matching system backend development which support 8 countries.

November 2021–Present

Techniques: Performance analysis and distributed system development.

- Integrated the inference server with amazon dynamoDb as permanent backend storage which increased the supported candidate count by 3x from the storage perspective.

- Did performance analysis on the job feature service. Applied rate limiter and multi-layer caching which resolve the performance bottleneck and support 14x more traffic volume.

Android Auto and AAOS software development

C/C++,Java

Next-generation phone to vehicle connectivity solution.

August 2020–November 2021

Techniques: Android development, performance analysis, system service development.

- Designed and implemented the next generation connectivity system software which provided a unified phone to vehicle communication layer. It manages the USB, Wi-Fi, Bluetooth(RFComm, BLE) as underline transports and makes low level connection details agnostic to the application.
- Design and implement an application level projecting solution for phone to vehicle projection.

Electronic trading platform development

Java,C/C++,Slang,Python

Next-generation ultra-low latency trading platform.

February 2018–July 2020

Techniques: Performance analysis, algorithm design and implementation and distributed system development

- Designed and implemented a next generation sequencer based ultra-low latency electrical trading platform, which provided less than 150us end to end latency for synthetic market access.
- Provided L3 support for the platform.

Linux kernel and system security software development.

C/C++,Python,Golang

Linux Kernel and Security Software Development for next-generation platform.

April 2016–February 2018

Techniques: Embedded system development, Linux kernel development and Containerization

- Responsible for Linux kernel and driver development for next generation platform.
- Reduced the kernel crash rate by around 30% and reduced the kernel boot time by around 40%.
- Designed and implemented containerization software for embedded Linux platform that has only limited resources.
- Coordinated container software work with other system middleware.

Height-Aided PNS

C/C++,Python,Java

A highly accurate pedestrian navigation system for urban canyon environment

April 2014–March 2016

Techniques: Optimization, Self-Localization, GNSS, Wi-Fi Localization and Android Programming

- Designed, implemented, and evaluated a height aided GNSS algorithm for pedestrian in urban environment under the supervision of a senior researcher and professor. This method improved the mean error of GNSS localization from 17 meters to 12 meters in an urban canyon.
- Integrated the height aided GNSS with PDR and Wi-Fi localization system. The integrated pedestrian navigation system could achieve around 6.5 meters mean error in urban canyon.
- This project was my master's thesis. The output of this project was sold to a well-known company.

Skills

- Algorithm design, analysis and implementation.
- Distributed system design, implementation.
- Linux kernel development, system software development, embedded platform development.
- Linux system administration.
- Android system development, application development.
- In-depth experience and knowledge of linux security mechanism: discretionary access control, capabilities, namespace, seccomp, cgroups.
- In-depth experience and knowledge of container software: runC and Docker.
- In-depth experience and knowledge of networking stack development.
- In-depth experience and knowledge of open source softwares: Spring, Kafka, Elastic Search, Hadoop, Spark.
- Good experience with using AWS and Google Cloud.
- Programming languages: C/C++, Java, Kotlin, Python, Assembly, Golang, Ruby/Rails.
- Languages: Chinese(Native), English(Fluent), Japanese(Fluent), German(Beginner)

Publications

Y. HUANG, L.-T. Hsu, Y. Gu, and S. KAMIJO, "Gnss correction using altitude map and its integration with pedestrian dead reckoning," *IEICE Transactions on Fundamentals of Electronics, Communications and*

Computer Sciences, vol. E101.A, pp. 1245–1256, 08 2018.

Y. Huang, L.-T. Hsu, Y. Gu, H. Wang, and S. Kamijo, "Database Calibration for Outdoor Wi-Fi Positioning System," *IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences*, vol. 99, no. 9, pp. 1683–1690, 2016.

L.-T. Hsu, Y. Gu, Y. Huang, and S. Kamijo, "Urban pedestrian navigation using smartphone-based dead reckoning and 3-D map-aided GNSS," *IEEE Sensors Journal*, vol. 16, no. 5, pp. 1281–1293, 2016.

J. C. Y.Y Huang, "vflipnum: A Local Search with Variable Flipping Frequency Heuristics for SAT," *Proceedings of SAT Competition 2013 : Solver and Benchmark Descriptions*, July 2013.