

Hiroki Azuma, MSc.

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🔗 azuma164

🌐 <https://azuma164.github.io/HirokiAzuma.me/>



Employment History

- 2022.4 - ... **Software Engineer (Internship)** at Function. Frontend engineer (Next.js, TypeScript) / Backend engineer (FastAPI, Python) / Infra engineer (Terraform, GCP, CI/CD) / Image processing engineer with object detection models (Pytorch). Mainly worked for backend and building infrastructure for backend and machine learning.
- 2024.2 **Software Engineer (Internship)** at Sony. Machine learning engineer (Pytorch).
- 2023.1 - 2023.7 **Software Engineer (Internship)** at Mutex. Development of retrieval systems using large language models (Flask, Python, LLM)
- 2022.11 - 2023.1 **Software Engineer (Internship)** at Cellid. Improvement of the performance about 3D reconstruction with SfM (Python)
- 2021.8 **Software Engineer (Internship)** at Cocone. Backend, API development (Java)

Education

- 2023 - 2026 (expected) **MSc, Information and Communication Engineering**
in The University of Tokyo, Japan. (Supervisor: Yusuke Matsui)
- 2023 - 2024 **Exchange, Electrical Engineering and Computer Science**
in KTH Royal Institute of Technology, Sweden. (Supervisor: Atsuto Maki).
- 2019 - 2023 **BE, Information and Communication Engineering**
in The University of Tokyo, Japan. (Supervisor: Yusuke Matsui, Kiyoharu Aizawa).
- 2016 - 2019 **High School**
in Kaisei High School, Japan.

Projects

- 2023 - 2024 **Development of Human Flow Digital Twins Generated from Camera Images.**
Accepted for "2023rd MITOU Advanced Program" from Information-technology Promotion Agency (IPA), Japan (Contract price: 14,400,000 yen). I was in charge of implementing frontend prototypes, product leader for backend, infra engineer, and advisor for machine learning team (I couldn't become a regular member due to living abroad).
What I did is summarized as follows:
- Implemented prototype for frontend using Next.js and Typescript.
- led a backend team and built API server using FastAPI.
- Built infrastructure for backend (Cloud Run, SQL, BigQuery), CI/CD (Github Actions, Cloud Build) and ML platform (Batch server, Pub/Sub).
- Advised a machine learning team to build suitable and accurate deep learning models.

Projects (continued)

2022

Development of a Real-time Visualization and Forecasting System for the Number of Containers and Delay Times at Ports.

Passed the first round of “NEDO Supply Chain Data Challenge (2023)” from New Energy and Industrial Technology Development Organization (NEDO). But we did not win in the final competition (prize: 1st: 10,000,000 yen, 2nd: 5,000,000 yen, and 3rd: 3,000,000 yen). I was responsible for building machine learning models as an image processing engineer.

Research Publications

Conference Proceedings

- 1 **H. Azuma**, Y. Matsui, and A. Maki, “Zodi: Zero-shot domain adaptation with diffusion-based image transfer,” in *Proceedings of Meeting on Image Recognition and Understanding (MIRU)*, 2024.
- 2 **H. Azuma** and Y. Matsui, “Defense-prefix for preventing typographic attacks on clip,” in *Proceedings of IEEE International Conference on Computer Vision Workshop (ICCVW)*, 2023.
- 3 **H. Azuma** and Y. Matsui, “Prefix learning for preventing typographic attacks on clip,” in *Proceedings of Meeting on Image Recognition and Understanding (MIRU)*, 2023.

Preprint

- 1 **H. Azuma**, Y. Matsui, and A. Maki, “Zodi: Zero-shot domain adaptation with diffusion-based image transfer,” *arXiv preprint: arXiv 2403.13652*, 2024.

Skills

Languages	Japanese (Native), English (Business level).
Coding	Python, C, C++, Java, Next.js, React, Typescript, Terraform, SQL, L ^A T _E X, ...
Databases	MySQL, SQLite, MongoDB, BigQuery.
Web Dev	HTML, CSS, JavaScript, GCP, AWS.
Misc.	Software development, Machine learning, Academic research.

Miscellaneous Experience

Awards and Achievements

- 2023
- Best Student Award, in MIRU2023.
 - Best Paper Award, in ICCV2023 Workshop AROW.

Certification

- 2022
- TOEFL IBT: 90.