

# Satoru Akita

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## SUMMARY

- Software Engineer specializing in edge–cloud integrated AI systems and distributed architectures.
- Experienced in designing and deploying production-grade ML solutions, including LLM-assisted system automation, in edge–cloud environments.
- Strong background in system architecture, multi-camera distributed systems, and enterprise technical collaboration in Japanese and English.

## SKILLS

**Languages:** Python, C/C++, TypeScript, JavaScript, Bash

**ML / AI:** PyTorch, TensorFlow, OpenCV, MediaPipe, Computer Vision, 3D sensing

**Cloud & Infrastructure:** Azure, AWS, GCP, Docker, CI/CD, MLOps pipelines

**Specialization:** Edge-Cloud hybrid systems, Distributed architecture, Data structures & algorithms

**Soft Skills:** Solution Scoping & Feasibility Analysis, On-site Technical Diagnostic & Requirement Engineering, Hardware-Software Integration Strategy, Technical event operations

## EXPERIENCE

### AI Solutions Architect | Sony Semiconductor Solutions, Tokyo

Jan 2023 – Present

- Led development and OSS publication of 9 AITRIOS sample applications**, showcased in 2 exhibitions, 3 national project demos, and 5+ enterprise technical briefings, serving as reference implementations for enterprise AI development
- Architected and deployed edge–cloud pilot systems** using AITRIOS-compatible cameras (including IMX500), designing NAS storage, PoE switching, LTE connectivity, and secure remote access architectures
- Designed and deployed multi-camera edge AI systems across 12 customer deployments**, including 30-camera distributed architectures (3 environments), 10-camera vehicle detection systems (4 deployments), 8-camera shelf monitoring systems (2 deployments), and 2-camera truck cargo monitoring systems (3 deployments)
- Developed AITRIOS MCP server prototype** and demonstrated LLM-assisted API migration (V1 → V2), **automating ~80% of repetitive code updates** through structured prompt engineering

### Edge AI Embedded Engineer | Sony Semiconductor Solutions, Tokyo

Jan 2020 – Dec 2022

- Developed IMX500 SDK and application demos** as a first-generation Edge AI engineer, **supporting enterprise technical adoption** of Sony's inaugural AI image sensor
- Designed and operated full-stack on-premise camera systems**, conducting circuit reviews, SoC research, hardware validation, and deployment support

### Computer Vision / ML Engineer (3D Sensing) | Sony Semiconductor

Apr 2019 – Dec 2019

Solutions, Tokyo

- Pioneered internal ToF ML use case**, independently building **46-class sign language recognition system (98% accuracy, 15 FPS)**; designed depth + facial landmark fusion pipeline from data collection to deployment
- Led ML development for ToF + RGB 3D pose estimation system** showcased at CES

## EDUCATION

### M.S. in Robotics

Tohoku University, 2017–2019

MEMS sensors, semiconductor processes, data utilization, machine learning

### B.S. in Mechanical Engineering

Tohoku University, 2013–2017

Robot contests, Programming work (particle simulation with C++ & OpenGL), Aerospace/Genetic/Control engineering

## CERTIFICATIONS

### Google Certified Professional - Cloud Architect

### TensorFlow Developer Certificate

AWS Solutions Architect - Associate

Azure AI Engineer Associate

Registered Information Security Specialist

## AWARDS & PUBLICATIONS

### SecHack365 (2019)

NICT-sponsored 1-year security hackathon program. Built Fasttext AI to visualize emotional transitions from Twitter posts. Selected for SXSW (Austin) and won an award at the on-site hackathon.

### Grand Prize, BIOMOD 2015

International biomolecular design competition, Harvard University

### Third Prize, iCAN'14

Global embedded systems competition - Developed earthquake-responsive bookshelf divider system

### Published Papers:

Froemel, J., Akita, S., et al. (2020). *Micromachines* (MDPI)

Uchida, T., Akita, S., et al. (2017). *Small* (Wiley)

## LEADERSHIP

### Founding Member

Whole Brain Architecture Young Researchers (Tohoku Chapter, 2018)

### SW Conference/Event Operations

SRE NEXT, Open Source Summit Japan, SecHack365

### Gemini API Hackathon

Mentor in collaboration with Google AI Student Ambassadors