

# Satoru Akita

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## 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 Solutions, Tokyo

Apr 2019 – Dec 2019

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