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