

# 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