Satoru Akita

AI Solutions Architect | 7+ Years ML/AI Experience

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AI Solutions Architect with **7+ years ML/AI experience** specializing in edge-cloud system integration. Proven Forward-Deployed Engineer at Sony, delivering end-to-end AI solutions from customer requirements gathering to production deployment. Led international partnerships (Raspberry Pi Foundation, Sweden-based Lund AB) and developed **7+ production-ready AI applications**. Strong technical background in Computer Vision, cloud platforms (GCP/AWS/Azure certified), and full-stack development.

Professional Experience

Sony Semiconductor Solutions Corporation | Tokyo, Japan

AI Solutions Architect & Edge Sensing Platform Engineer — April 2019 – Present (6 years)

Customer-Facing AI Solutions (2021–Present)

- Architected and deployed edge-cloud AI systems for enterprise customers including logistics warehouses and manufacturing facilities
- Led **5-person team** developing **7 open-source sample applications** (Check Data Tool, Keypoint Detection, Object Occupancy Rate, Truck Berth DB, GUI Tool, Basic Visualization, Human Detection)
- Drove international collaboration with Raspberry Pi Foundation and Sweden-based Lund AB, conducting technical discussions in English and managing OSS publication
- Designed hybrid solutions integrating IMX500 AI cameras with Azure/AWS, optimizing for bandwidth efficiency and data privacy
- Conducted on-site technical workshops and training for partner companies

Tech Stack: Python, Next.js, FastAPI, PostgreSQL, IMX500, ESP32, Raspberry Pi, Azure, AWS, Docker

Edge AI Development (2019–2021)

- Developed 3D pose estimation system using ToF+RGB for yoga guidance, exhibited at **CES 2019**
- Built sign language recognition system from ToF sensor images with end-to-end ML pipeline
- Extended IMX500 edge AI sensor SDK and implemented embedded AI solutions
- Optimized ML models for resource-constrained edge deployment

Key Technologies: Computer Vision, TensorFlow, OpenCV, C++, embedded systems

Technical Skills

Category	Details
AI/ML	Computer Vision, Edge AI, Deep Learning (7+ years) · TensorFlow, PyTorch, OpenCV
Languages	Python (6 years), JavaScript/TypeScript (3 years), C++ (2 years)
Cloud	GCP (Certified Architect), AWS (Certified Solutions Architect), Azure (AI certified)
Development	Next.js, FastAPI, React, PostgreSQL, Docker, CI/CD, GitHub Actions
Hardware	IMX500, ESP32, Raspberry Pi, MEMS sensors
Human Languages	Japanese (Native), English (Business – TOEIC 800)

Education

Tohoku University | Sendai, Japan

Master of Engineering in Robotics — 2017 – 2019

- MEMS sensors, semiconductor processes, data utilization, machine learning

Bachelor of Engineering — 2013 – 2017

- Research: Molecular robotics using DNA nanotechnology
- Published in Small journal (2017)
- Founded Whole Brain Architecture Young Researchers Association (Tohoku Chapter, 2018)

Certifications

Category	Certifications
Cloud	Google Professional Cloud Architect · AWS Solutions Architect – Associate · Azure AI Fundamentals
AI/ML	TensorFlow Developer Certificate
Security	Information Processing Safety Support Specialist (Japan) · Fundamental IT Engineer

Awards & Publications

🥇 **BIOMOD 2015 – Grand Prize** | International biomolecular design competition

🥉 **iCAN'14 – 3rd Place Worldwide** | International nano/micro technology applications contest

🧠 **Sechack365 (2017)** | Elite cybersecurity training program by NICT

🚀 **SXSW Hackathon Award (2018)** | Corporate prize for AI life-log camera

Publications:

- Froemel, J., **Akita, S.**, et al. (2020). Micromachines, 11(12), 1109
- Uchida, T., **Akita, S.**, et al. (2017). Small, 13(44)

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