

Akito Yamauchi

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Education

Columbia University, Fu Foundation School of Engineering and Applied Science
B.S. in Electrical Engineering · Expected May 2028

New York, NY
Cumulative GPA: 3.90

87.5 credits completed in four semesters, including petition-approved 24- and 25-credit terms.

Experience

SoftBank Corp. — Corporate IT Division

Aug 2026

Software Engineering Intern (special overseas-student track)

Tokyo, Japan

- Built an offline enterprise ontology data platform (macOS Swift, WKWebView) with branch-aware data lineage, permission evaluation, and dynamic scheduling to orchestrate business logic.
- Engineered an automated LLM validation pipeline (Chrome Extensions, GAS, OpenAI API) and a local-LLM (Ollama) agent to enforce complex workflow state-transition guardrails.

ResearcherX

2026 – Present

Co-founder and Product Lead

New York, NY

- Built an AI document editor with a logic-validation engine; own the backend infrastructure (FastAPI, LanceDB, Neo4j, LiteLLM) and knowledge-graph extraction pipeline.
- Advanced to the final round of Columbia's Millard Chan Technology Challenge.

EchoID — Solo fully-local macOS meeting notetaker: speaker diarization (pyannote), transcription (WhisperX), and summarization (Ollama).

Research Experience

Undergraduate Researcher — LIINC, Columbia University

Feb 2025 – Present

Brain-Computer Interface; PI: Prof. Paul Sajda

New York, NY

- Developing a multimodal hierarchical transformer, in collaboration with Google DeepMind, that unifies electrophysiology (EEG, ECoG) and hemodynamics (fMRI, fNIRS) in a shared representation, pretrained across large-scale public datasets (TUH EEG, SEED, THINGS).

Undergraduate Researcher — Zuckerman Institute, Columbia University

Jan 2025 – Present

Biomedical Imaging; PI: Dr. Jia Guo

New York, NY

- Built a Hybrid CNN-Transformer for K^{trans} map reconstruction from DCE-MRI that surpasses the state-of-the-art model, and developed a novel approach deriving K^{trans} from IVIM-MRI without gadolinium contrast.
- Developed an encoding-decoding framework generating voxel-wise amyloid- β and tau pathology maps directly from non-invasive T1-weighted MRI.

HCI Research Intern — University of Tokyo, Inami-Monnai & Fiber Photonics Labs (Jun–Aug 2023): tactile 3D force-sensing on load-cell arrays (Arduino C, Java); initiated an optical-fiber dual-axis force sensor.

Publications & Intellectual Property

- **Magnetic Resonance Spectroscopy Research: U.S. provisional patent application filed.** Developed a deep-learning method for magnetic resonance spectroscopy.
- **Yamauchi, A., et al.** “Hybrid 2D CNN-Transformer Achieves Fast and Robust K^{trans} Mapping of FUS-Induced BBB Opening.” *ISMRM 2026. First author.*
- **Yamauchi, A., et al.** “Hybrid 3D CNN-Transformer for Accelerated and Robust Cerebral Blood Volume (CBV) Reconstruction from PWI-MRI.” *ISMRM 2026. First author.*
- Li, Z., **Yamauchi, A., et al.** “Augmenting Human Performance with an XR Agent Learning from Online Behavior and BCI Evidence.” *ACM UIST 2026* (Accepted, ~20% acceptance rate).

Teaching & Mentoring

BRAINYAC Research Mentor — Zuckerman Institute, Columbia University

Jun – Aug 2026

Neuroscience research mentoring program

New York, NY

- Mentor two high-school students through a full research cycle on brain-age prediction from T1-weighted MRI. Mentors are normally PhD students or postdocs; selected as an undergraduate.

Lab Assistant (Enhanced Teaching Assistant), Signals & Systems Laboratory (ELEN E3084), Columbia EE — Fall 2026.

Skills

Languages: Python, MATLAB, C#, Java, JavaScript, Arduino C · **Spoken:** Japanese, English (native)

ML & Tools: PyTorch, TensorFlow, MONAI, transformers, state-space models (Mamba), CNNs, self-supervised & multi-task learning, distributed training, Unity, Git

Imaging & Neuro: MRI (DCE, IVIM, T1w), MRS, PET, EEG, ECoG, fNIRS, PhysioLabXR

Awards

Dean's List, Columbia Engineering — **all four semesters** · Summer@SEAS Research Fellow (2026) · Yanai Tadashi Scholarship · **Data Science Institute Scholar** (2025) · Joseph Howland Coit Medal