

Ke Zhang

571-563-5116 | kezhang6@illinois.edu | <https://www.linkedin.com/in/amityzhang/> | <https://github.com/kezhang6-Amity>

EDUCATION

University of Illinois Urbana-Champaign

Bachelor of Science in Neural Engineering

GPA: 4.0

Grainger College of Engineering Achievement Scholarship

Champaign, IL

May 2028

EXPERIENCE

Omni-Intel (Neurotechnology Startup) | SUSTech NCC Lab

Research Intern

EEG Systems • Real-Time BCI • Computational Neuromodulation

Shenzhen, China

May 2026 – Aug 2026

- Developed NeuroScope, a 64-channel real-time EEG platform unifying acquisition, stimulation, event synchronization, visualization, and analysis across 10 BCI paradigms and 3 EEG hardware ecosystems.
- Built subject-specific motor imagery decoding pipelines achieving 75%+ accuracy, supporting real-time BCI interaction and Unity-based control; collected 50+ hours of synchronized EEG data.
- Built reproducible research-data pipelines and an automated test suite with 104 test cases for EEG acquisition, paradigm execution, synchronization, and data integrity.
- Developed a cerebrovascular neurostimulation planning algorithm evaluating 116 candidate sites across 578 vessel chains, with automated electrode placement, FEM simulation, and anatomical mapping.
- Contributed as co-inventor to a patent application for patient-specific endovascular neurostimulation planning and optimization.

Illinois-Carle Joint Neural Engineering and Rehabilitation Laboratory

Research Assistant

Champaign, IL

Dec 2025 – Present

- Investigate stimulation-induced neural responses using SEEG and computational neuroengineering.
- Develop FEM pipelines integrating electric-field simulations with brain connectivity analyses.
- Analyze large-scale electrophysiological datasets to characterize brain network dynamics supporting translational neuromodulation research.

MindScents

Founder | Research Lead

Champaign, IL

Feb 2026 – Present

- Founded and led development of an EEG-based olfactory neuroscience platform investigating individualized neural and affective responses to odor stimulation.
- Designed human-subject EEG protocols and analysis pipelines for planned validation using a 64-channel BioSemi system in collaboration with UIUC faculty.
- Conducted a pilot study using a 16-channel OpenBCI system and preprocessed recorded EEG through filtering and artifact rejection.
- Directed a 4-member interdisciplinary team across machine learning, neuroscience, software, and fragrance science from concept validation to prototype.
- Validated user interest through 200+ participant responses, showcased at UIUC Engineering Open House and the Cozad Venture Challenge, and filed a U.S. trademark application.

LEADERSHIP

NeuroTech@UIUC — Director of Outreach

May 2026 – Present

- Lead university and industry outreach, building strategic partnerships and securing sponsorships and funding opportunities for the organization.

TECHNICAL SKILLS

Programming & ML: Python, MATLAB, PyTorch, scikit-learn, NumPy, SciPy, PySide6, Streamlit, Jupyter, Git/GitHub, Lab Streaming Layer, deep learning, classification, model training & evaluation

Neurotechnology & Signal Processing: EEG, SEEG, BCI, MNE-Python, EEGLAB, spectral feature extraction, electrophysiological signal processing, emotion decoding, real-time neural decoding

Research & Engineering: FEM, brain connectivity analysis, experimental design, human-subject research, Unity