

Chaeyeon Kim

Research Assistant

United States | [LinkedIn](#) | [GitHub](#)

Computer Science student at University at Buffalo focusing on brain-computer interfaces and EEG signal processing, with experience in data analysis and full-stack development.

EXPERIENCE

Neuropoly (UB Hackathon 2025) Nov 2025 — Nov 2025
University at Buffalo University at Buffalo, New York, United States

- Developed a non-invasive BCI system enabling gameplay using only EEG signals
- Implemented live data acquisition with OpenBCI Ganglion and BrainFlow
- Designed signal processing pipeline: band-pass filtering, FFT, CCA frequency detection
- Built Python-based integration for real-time neural intent recognition
- Created attention-based input system without eye tracking or physical controllers
- Demonstrated accessibility-focused gameplay for users with mobility impairments
- Collaborated with a multidisciplinary team from CS, EE, and neuroscience

Research Assistant Sep 2025 — Present
University at Buffalo, Department of Computer Science & Engineering / ESC Group Buffalo, NY
Co-authoring a PRISMA-ScR systematic review on non-invasive brain-computer interfaces, unifying speech-decoding and auditory-modulating research. Contributing to the NeurIPS 2025 EEG Foundation Challenge by developing and benchmarking models using the Braindecode framework.

Teaching Intern Sep 2025 — Dec 2025
UB Data Science & Machine Learning Club University at Buffalo, NY

- Facilitate weekly workshops on Python, data analysis (Pandas, NumPy), and foundational machine learning concepts.
- Teach supervised/unsupervised learning, model evaluation, and practical ML workflows using scikit-learn.
- Mentor students through hands-on projects, including exploratory data analysis, feature engineering, and training ML classifiers.
- Develop learning materials, coding templates, and interactive demos to support 100+ students across beginner and intermediate sessions.
- Drive a collaborative learning environment by helping participants debug code, understand algorithms, and build portfolio-ready projects.

Data Analyst Freelancer Jul 2024 — Jul 2025
Chartmetric Remote
Automated keyword extraction and SQL debugging for music analytics dashboards, improving query accuracy by 30% and reducing execution time by 25%. Collaborated with AI engineers on chart intelligence and resolved data mismatches in ClickHouse pipelines. Designed scalable workflows to match songwriter metadata across AllMusic, MLC, and Spotify.

Business Operator Intern Jan 2024 — Jul 2024
BFactory Seoul, South Korea
Built multilingual Ameli websites in Korean, Japanese, and English. Analyzed ad performance using GA4 and Google Ads to optimize campaign effectiveness.

EDUCATION

University at Buffalo Sep 2024 — Jun 2027
Computer Science
GPA: 3.93/4.0

PROJECTS

- EEG-controlled online monopoly-style game**, Neuropoly
Developed a real-time EEG-controlled game using OpenBCI Ganglion signals. Built preprocessing and classification pipeline to enable attention-based game interactions. Coordinated demo strategy, documentation, and debugging within 24 hours.
- Deep learning model for MRI classification**, Brain Tumor Classifier
Built a CNN model to classify brain tumor MRI images across multiple categories. Preprocessed dataset with normalization, augmentation, and stratified splits. Optimized performance through hyperparameter tuning.

CERTIFICATIONS

- Google AI Essentials**, Google Jul 2024
- ChatGPT Advanced Data Analysis**, Vanderbilt University Feb 2024

SKILLS

Pandas (Software) · Machine Learning · NumPy · Scikit-Learn · Neuroengineering · Research Skills ·
Electromyography (EMG) · BrainFlow · MNE-Python · EEG Signal Processing · SSVEP · Brain-computer Interfaces
· Neurotechnology · Python (Programming Language) · SQL · C++ · Data Analysis · Full-Stack Development ·
International Business Strategy · Front-End Development · Digital Marketing · Search Engine Optimization (SEO) ·
Advertising Planning · Customer Segmentation Strategy · TensorFlow · Keras · ClickHouse · OpenBCI ·
Braindecode · deep learning · GA4 · Google Ads · web development