Ruohan (Fleur) Feng
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SUMMARY

Data scientist with advanced training in statistical modeling and experimental design, currently a Ph.D. candidate in Cognitive & Brain Science with an M.S. in Computer Science, experienced in analytical pipelines, controlled experiments, and data-driven insights using R, Python, and SQL.

EDUCATION

Georgia Institute of Technology, Atlanta, GA | GPA: 3.81   *Sep 2023 – Dec 2027 (Expected)*
Ph.D. Candidate in Cognitive & Brain Science, Minor in Machine Learning
M.S. in Computer Science
Relevant Coursework: Modeling and Simulation, Computational Data Analysis, Data and Visual Analytics, Machine Learning, Regression, Statistics, Neuroimage

Syracuse University, Syracuse, NY   *Aug 2019-May 2022*
M.S. in Clinical Mental Health Counseling

Hong Kong Baptist University, Hongkong   *Sep 2014 – Jun 2018*
B.S. in Applied Psychology

WORK EXPERIENCE

Georgia Institute of Technology, Lab Instructor of Psychological Statistics for HCI.   *Jan – May 2025; Jan – May 2026*
- Led weekly labs for Psychological Statistics, training about 30 students in **R** across end-to-end analytical workflows, including **data cleaning, visualization, and statistical modeling**.
- Mentored students in applying and interpreting **ANOVA, regression, and multivariate models**, with an emphasis on diagnostic reasoning and assumption checking to ensure statistical validity.

China Vanke Co., Ltd. (Vanke Group), Data Operations Intern –Tianjin, China   *Jan 2023 – Aug 2023*
- Translated finance workflow requirements into functional specs and supported API-based data integration.
- Improved financial data standardization and cleansing workflows by refining mapping logic, adding validation and exception handling, and partnering with engineering teams—reducing manual reconciliation efforts by ~15–20%.

SELF Lab-Syracuse University, Research Coordinator, Syracuse, NY   *Jan 2021 – Jun 2022*
- Analyzed a 2,121-participant mindfulness dataset using hierarchical multilevel models; built pipelines for large-scale cleaning, centering, model comparison, and variance-partitioning, contributing statistical insights to a peer-reviewed publication. **Publication Link**: https://link.springer.com/article/10.1007/s40688-025-00548-5
- Conducted ERP preprocessing (**resampling, average re-referencing, band-pass filtering, ocular artifact attenuation**) in MNE-Python, extracting amplitudes and testing regulation-condition effects with **repeated-measures ANOVAs.**

LEADERSHIP EXPERIENCE

Georgia Institute of Technology, **Host & Organizer of Brown Bag Academic Seminar**   *Sep 2024 – Dec 2025*
- Organized and hosted a weekly departmental research seminar and scholarly presentation forum of the School of Psychology, coordinating session logistics and moderating each meeting.

SELECTED PROJECTS

EEG State Modeling with Graph Features & HMM | *MNE, NumPy/Pandas, SciPy, NetworkX*   *Sep 2025 – Present*
- Built an end-to-end EEG analysis pipeline in Python (MNE, SciPy, NumPy/pandas), extracting multilayer connectivity features (**band-limited correlations, PLV**) and applying **PCA, kNN-based graph construction, Louvain clustering, and Gaussian HMMs** to model latent brain-state transitions and mind-wandering dynamics.
  GitHub repository: https://github.com/rfeng77/CSE6242_decode_mind_wandering
- Used **React and JavaScript** to develop interactive visualizations—including spatial-temporal scalp-map animations and an ROI feature-explorer dashboard—to display EEG dynamics, state sequences, and model performance across brain regions. **Live Demo**: https://cse6242-project.vercel.app/

Behavioral Analytics & State-Transition Modeling | *tidyverse, lme4, afex, tvem, depmixS4, kernlab*   *Jan 2024 –July 2025*
- Engineered a trial-level behavioral analytics pipeline in R, integrating robust data cleaning, normalization, and temporal feature construction to quantify reward-modulated changes in cognitive flexibility.
- Leveraged advanced statistical and unsupervised modeling—including **mixed ANOVA, Time-Varying Effect Modeling (TVEM), spectral clustering, and Hidden Markov Models**—to uncover latent behavioral regimes and characterize state-transition dynamics. **PsyArXiv link:** https://osf.io/preprints/psyarxiv/qj2av_v1

SKILLS

Programming & Computational Tools: R, Python (PySpark, pandas, NumPy, PyTorch, Matplotlib, TensorFlow), MATLAB, SQL, GitHub, Java, LaTeX, PsychoPy, SPSS, RevMan, Qualtrics, Tableu, Microsoft Excel

Quantitative & Modeling Expertise: Machine learning; Deep learning; Computational modeling (e.g., Bayesian inference, latent growth models); Advanced statistical methods (e.g., SEM, multilevel modeling, time-varying effect modeling); Psychometric analysis; Experimental design; Data visualization; Signal processing

Languages: Working proficiency in English and Mandarin