

Zach Rodiere

zrodiere.com — github.com/zrodiere

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TECHNICAL SKILLS

- Python, C++ (C++17), PyTorch, SQL, Bash
- Transformers, contrastive/self-supervised learning, graph neural networks (DCGRU)
- Neural time-series modeling, wavelet/spectral analysis, BIDS data standardization
- Linux, Git, Docker

EXPERIENCE

- **École Normale Supérieure de Lyon** Lyon, France
Research Intern – Neural Decoding *Oct 2024 – May 2025*
 - **End-to-End Neural Decoding Pipeline:** Developed end-to-end SEEG decoding pipeline for seizure onset zone detection.
 - **Spatio-Temporal Modeling:** Designed Transformer-based architecture for multi-channel intracranial EEG using wavelet-based feature extraction optimized for low-SNR neural signals.
 - **Representation Learning:** Designed contrastive pre-training strategy to improve cross-patient generalization; benchmarked against DCGRU and graph-based baselines.
 - **Data Engineering:** Standardized heterogeneous clinical datasets using BIDS and merged multiple SEEG cohorts into unified training dataset in PyTorch.
 - **Publication:** First-author workshop paper: *Spatial Contrastive Pre-Training of Transformer Encoders for SEEG-Based Seizure Onset Zone Detection* (GSP 2025).
- **Manhattan Associates** Puteaux, France
Support Analyst Intern *Jun 2024 – Sep 2024*
 - **Production Systems:** Supported production microservices and developed Spring backend features for enterprise B2B SaaS platform.
 - **Backend Development:** Built custom SpringBoot extension interacting with Oracle DB and REST APIs; debugged backend services under real-world operational constraints.
- **ETIS Lab** Cergy, France
Research Intern *Jun 2023 – Sep 2023*
 - **Vision Transformers:** Implemented Vision Transformer models for multi-label classification, achieving >95% AUC.
 - **Technical Communication:** Produced detailed technical reports and research presentations for academic supervisors.

PROJECTS

- **Two-Stage Spatio-Temporal SOZ Detection:** Extended neural decoding architecture into two-stage spatio-temporal framework for improved robustness and generalization; implemented modular experimentation pipeline in PyTorch. zrodiere.github.io/soz/final
- **Markdown to HTML Newsletter Generator:** Built production-grade HTML newsletter generator converting structured Markdown into clean HTML. github.com/zrodiere/hkn-news

EDUCATION

- **Georgia Institute of Technology** Atlanta, GA
M.S. Electrical and Computer Engineering; GPA: 4.00/4.00 *Jan 2024 – May 2026*
 - Relevant coursework: Probabilistic Graphical Models, High-Dimensional Statistics, Advanced C++
- **École Nationale Supérieure de l'Électronique et de ses Applications (ENSEA)** Cergy, France
Engineering Degree in Electrical and Computer Engineering; Ranked 1st/221 *Sept 2021 – Dec 2023*