

Joel Ye

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joel99.github.io 

Interests

Brain-Computer Interfaces, NeuroAI, Embodied AI

Education

Carnegie Mellon University

PhD Program in Neural Computation | *GPA: 4.0 / 4.0* 2021-
Advisors: Robert Gaunt, Leila Wehbe. Expected graduation: 2026

Georgia Institute Of Technology

M.S. Computer Science | Machine Learning Specialization | *GPA: 4.0 / 4.0* 2021
B.S. Computer Science | Minor in Mathematics | *GPA: 4.0 / 4.0* 2017-2020

Publications

A Generalist Intracortical Motor Decoder. *NeurIPS*, 2025.

Ye, J., Rizzoglio, F., Smoulder, A., Mao, H., Ma, X., Marino, P., Chowdhury, R., Moore, D., Blumenthal, G., Hockheimer, W., Kunigk, N.G., Mayo, J.P., Rouse, A., Batista, A., Chase, S., Greenspon, C., Miller, L., Hatsopoulos, N., Collinger, J.L., Wehbe, L., Gaunt, R.

FALCON: Few-shot Algorithms for Consistent Neural Decoding. *NeurIPS*, 2024.

Karpowicz, B.*, Ye, J.*, Fan, C., Tostado-Marcos, P., Rizzoglio, F., Washington, C., Scodeler, T., de Lucena, D., Nason-Tomaszewski, S. R., Mender, M. J., Ma, X., Arneodo, E. M., Hochberg, L. R., Chestek, C. A., Henderson, J. M., Gentner, T. Q., Gilja, V., Miller, L. E., Rouse, A. G., Gaunt, R. A., Collinger, J. L., Pandarinath, C.

Neural Data Transformer 2: Multi-context Pretraining for Neural Spiking Activity. *NeurIPS*, 2023.

Ye, J., Collinger, J., Wehbe, L.*, Gaunt, R.*.

Neural Latents Benchmark '21: Evaluating latent variable models of neural population activity. *Neural Information Processing Systems (NeurIPS) Benchmarks and Datasets*, 2021.

Pei, F.*, Ye, J.* Zoltowski, D., Wu, A., Chowdhury, R., Sohn, H., O'Doherty, J., Shenoy, K., Kaufman, M., Churchland, M., Jazayeri, M., Miller, L., Pillow, J., Park, M., Dyer, E., Pandarinath, C.

Auxiliary Tasks and Exploration Enable ObjectNav. *International Conference on Computer Vision (ICCV)* 2021.

Ye, J., Batra D., Das A., and Wijmans E.

Auxiliary Tasks Speed Up Learning PointGoal Navigation. *Conference on Robot Learning (CoRL)*, 2020.

Ye, J., Batra D., Wijmans E., and Das A.

Representation learning for neural population activity with Neural Data Transformers. *Neurons, Behavior, Data analysis, and Theory (NBDT)*, 2021. Poster at SfN 2021, Neuromatch 3.0, 2020.

Ye, J., Pandarinath, C.

Talks

Benchmarking for BCI foundation models

(Organizer) BCI Society 2025

Evaluating progress in neural foundation models

Cosyne 2025

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Honors and Awards

DOE Computational Science Graduate Fellowship. National fellowship for scientific research using high performance computing (2022-26).

Donald V. Jackson Fellowship. Award for academic excellence and leadership. 1 of 3 awards for 250 eligible MS students in the Georgia Tech College of Computing.

Experience

Amazon, Research Intern	Summer 2021
• Studied embodied agent navigation in dynamic settings	
Microsoft, Visual Document Intelligence, Software Engineering Intern	Summer 2020
• Prototyped region annotation and data augmentation for doc. understanding frontend + C# backend	
Ubiquity6, Software Engineering Intern - San Francisco, CA	Summer 2019
• Prototyped wayfinding experience for navigating AR scenes, using a custom navigation mesh	
• Analyzed ARKit (Obj-C) and ARCore (Java) anchor drift, assessing viability for better pose priors	

Projects

A Saccading Model for Temporal Illusions Report: github.com/joel99/illusions	2021
• We apply a self-supervised recurrent vision model to reproduce the uniformity illusion.	
Learning from Different Expert Agents Report: joel99.github.io/lfd_7648_final.pdf	2021
• How can one robot learn from demonstrations given by another robot?	
• We propose Seq2Seq domain translation to overcome the action space mismatch between robots.	
Perturbome of Graphs of RNNs Report: github.com/joel99/noised-rnn-networks	2020
• How do deep neural networks compute in the presence of internal noise, or targeted perturbation?	
• Evaluated this dynamical robustness by noising recurrent networks built with pytorch-geometric	
Photobooth github.com/HackGT/photo-style	2018
• Interfaced with style-transfer server to collect styled photos, built masking app with HTML canvas	
• Set up server polling endpoint to interface with DSLR camera trigger, provide fallback laptop camera	