Joel Ye

joelye9@gmail.com ✉
joel99.github.io ▶

Research Interests

NeuroAI, Embodied AI, Brain-Computer Interfaces, AR/VR, Machine Perception

Education

Carnegie Mellon Universiy
PhD Program in Neural Computation   2021-
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 and Presentations

Neural Latents Benchmark '21: Evaluating latent variable models of neural population activity. *Pre-print.*
  F. Pei*, **J. Ye***, D. Zoltowski, A. Wu, R. Chowdhury, H. Sohn, J. O'Doherty, K. Shenoy, M. Kaufman, M.
  Churchland, M. Jazayeri, L. Miller, J. Pillow, M. Park, E. Dyer, C. Pandarinath.
Auxiliary Tasks and Exploration Enable ObjectNav. *International Conference on Computer Vision (ICCV)* 2021.
  J. Ye, D. Batra, A. Das, and E. Wijmans.
 Auxiliary Tasks Speed Up Learning PointGoal Navigation. *Conference on Robot Learning (CoRL)*, 2020.
  J. Ye, D. Batra, E. Wijmans, and A. Das.
Representation learning for neural population activity with Neural Data Transformers. *NBDT (Neurons, Behavior, Data analysis, and Theory) 2021*. Poster at SfN 2021, Neuromatch 3.0, 2020.
  J. Ye, C. Pandarinath.

Awards

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.

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

Experience

Amazon   Summer 2021
  · Study embodied agent navigation in dynamic settings.
Microsoft, *Visual Document Intelligence, Software Engineering Intern - Remote*   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