Joel Ye

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joel99.github.io

Research Interests

NeuroAI, Embodied AI, Brain-Computer Interfaces, Machine Perception

Education

Georgia Institute Of Technology
B.S. Computer Science | Minor in Mathematics | *GPA: 4.0 / 4.0* May 2020
M.S. Computer Science | Machine Learning Specialization | *GPA: 4.0 / 4.0* May 2021
- Coursework: Comp. Neuro, Network Science, Computation and the Brain, Learning from Demonstrations

Stuyvesant High School
Advanced NYS Regents Diploma | *GPA: 4.0 / 4.0* Jun 2017

Publications and Presentations

J. Ye, D. Batra, E. Wijmans, and A. Das. Auxiliary Tasks Speed Up Learning PointGoal Navigation. In *Conference on Robot Learning (CoRL)*, 2020.
J. Ye, C. Pandarinath. Representation learning for neural population activity with Neural Data Transformers. In submission. Poster presentation at Neuromatch 3.0, 2020.

Awards

Donald V. Jackson Fellowship. Awarded to 1st-year MS students in the Georgia Tech College of Computing.

Projects

Perturbome of Graphs of RNNs | Report: github.com/joel99/noised-rnn-networks Fall 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

BERT Representations During Fine-Tuning | Report: github.com/joel99/bert-representations Fall 2020
- Studied how transformers change during fine-tuning and forgetting using representational analysis

Automatically Defined Functions Fall 2019
- Designed and built system to detect and extract useful functions in evolved computation trees

Photobooth | github.com/HackGT/photo-style Fall 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

Microsoft, *Visual Document Intelligence, Software Engineering Intern - Remote* Summer 2020
- Prototyped empty region annotation and data augmentation for document recognition frontend
- Integrated, benchmarked and analyzed data augmentation performance in C# backend

Ubiquity6, *Software Engineering Intern - San Francisco, CA* Summer 2019
- Prototyped wayfinding experience for navigating AR scenes, using a custom navigation mesh
- Wrote React Native UI for collecting user feedback, improving components for draggable content
- Wrote SfM post-processing to prototype feature extraction training pipeline
- Analyzed ARKit (Obj-C) and ARCore (Java) anchor drift, assessing viability for better pose priors
- Extended render engine testing suite through Puppeteer, wrapping Three.JS API

HackGT, *Director of Technology - Atlanta, GA* 2019
- Led 10+ students to make hackathon tech. Worked on executive board to plan hackathon events
- Led curriculum committee to collaborate with campus CS organizations on workshops