Sayan Nag

sayannag sayan.nag nagsayan sayan.nag@mail.utoronto.ca 437-218-1801

Education

2019–present — PhD, Artificial Intelligence and Neuroscience — **University of Toronto**
- Deep Learning, Bayesian Inference, Graph Networks, Computer Vision, Time-Series
- GPA: 4.0/4.0

2014–2018 — B.E., Electrical Engineering — **Jadavpur University**
- *First Class Honours*

Work Experience

2018–2019 — Technology Associate (Consultant) — **PriceWaterhouseCoopers**
- Software Engineering

Programming Languages

- C/C++, Python, Julia, MATLAB, Java, SQL, HTML, XML, CSS, JavaScript

Projects

- *Deep causal graph-based models* for exploring brain connectivity for complex movie stimuli using fMRI time-series data (PhD Thesis, Ongoing).
- Nuclei segmentation using *kernel attention* strategies (Ongoing).
- *Self-supervised Learning* for multi-modal learning of healthcare data (Ongoing).
- *Deep Cross-Domain Fusion Network* for accelerated MR Image reconstruction using fastMRI dataset (PhD Rotation).
- Fundus Images for Eye Condition Monitoring Assessment using *Convolutional Neural Networks* (Undergrad Thesis).
- Developing *Deep Learning techniques* for Indian Music Emotion and Instrument Classification (Internship).
- *Depth map filtering algorithms* including bilateral filtering, developing strategies for hole filling in depth maps (Internship).

Selected Publications

- Ahana Deb, **Sayan Nag**, et al. OTSAR: Optimal Transport based Speech Act Recognition from Bengali Speech Corpus (Under Review), 2022.
- **Sayan Nag** et al. SERF: Towards better training of deep neural networks using log-Softplus ERror activation Function (Accepted) In *ICPR*, 2022.
- Mayukh Bhattacharya*, **Sayan Nag*** et al. Deciphering Environmental Air Pollution with Large Scale City Data (Accepted) In *IJCAI*, 2022. (* denotes equal contribution)
- **Sayan Nag**. Graph Self Supervised Learning: the BT, the HSIC, and the VICReg. In *IJCAI Weakly Supervised Representation Learning Workshop*, 2021.
- Osvald Nitski, **Sayan Nag**, et al. CDF-Net: Cross-Domain Fusion Network for Accelerated MRI Reconstruction. In *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI).*, Springer, Cham, 2020.
- Mayukh Bhattacharyya and **Sayan Nag**. Hybrid style siamese network: Incorporating style loss in complementary apparels retrieval. In *In CVPRWorksh.*, 2020.

Tools and Frameworks

- Numpy, Pandas, SciPy, scikit-learn, librosa, tqdm, matplotlib, seaborn, PyTorch, Keras

Academic Achievements

- MBP Excellence University of Toronto Fellowship recipient (2019-present)
- Review articles in *Pattern Recognition Letters* and *Engineering Applications of Artificial Intelligence*.