

# Sayan Nag

📍 sayannag in sayan.nag 📧 nagsayan ✉ sayan.nag@mail.utoronto.ca 📞 437-218-1801

## EDUCATION

- 📅 2019–present      PhD, Artificial Intelligence and Neuroscience      **University of Toronto**  
    » 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 (Ongoing).
- » *Self-supervised Learning* using multi-modal data (Ongoing).
- » Nuclei segmentation using *kernel attention* strategies (Manuscript to be submitted).
- » *Deep Cross-Domain Fusion Network* for accelerated MR Image reconstruction using fastMRI dataset (PhD Rotation).
- » Fundus Images for Eye Condition Monitoring Assessment (Undergrad Thesis).
- » *Deep Learning techniques* for Indian Music Emotion and Instrument Classification (Internship).

## SELECTED PUBLICATIONS

- » Shraman Pramanick\*, Li Jing\*, **Sayan Nag\***, Jiachen Zhu, Hardik Shah, Yann LeCun, Rama Chellappa. VoLTA: Vision-Language Transformer with Weakly-Supervised Local-Feature Alignment. In *arXiv: 2210.04135*, 2022. (\*Equal Contribution)
- » **Sayan Nag\***, Mayukh Bhattacharyya\*, Anuraag Mukherjee\*, Rohit Kundu\*. SERF: Towards better training of deep neural networks using log-Softplus Error activation Function (Accepted) In *WACV*, 2022. (\*Equal Contribution)
- » Mayukh Bhattacharyya\*, **Sayan Nag\***, Udit Ghosh. Deciphering Environmental Air Pollution with Large Scale City Data (Accepted) In *IJCAI*, 2022 (**Oral & Spotlight Presentation, AI For Good Track Best Paper Award**). (\*Equal Contribution)
- » Hritam Basak\*, Soumitri Chattopadhyay\*, Rohit Kundu\*, **Sayan Nag\***, Rammo-han Mallipeddi. IDEAL: Improved DENSE local Contrastive Learning for Semi-Supervised Medical Image Segmentation. In *arXiv: 2210.15075*, 2022.
- » **Sayan Nag**, Medha Basu, Shankha Sanyal, Archi Banerjee, Dipak Ghosh. On the application of deep learning and multifractal techniques to classify emotions and instruments using Indian Classical Music. In *Physica A*, 2022.
- » **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**, Chris McIntosh, Bo Wang. CDF-Net: Cross-Domain Fusion Network for Accelerated MRI Reconstruction. In *MICCAI*, 2020.
- » Mayukh Bhattacharyya and **Sayan Nag**. Hybrid style siamese network: Incorporating style loss in complementary apparels retrieval. 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*.