VASUDEV SHARMA

Toronto, Canada

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Education

University Of Toronto	**Sep. 2021 – Present**
Master of Science in Applied Computing (Computer Science)	*Toronto, Canada*
VIT University	**Sep. 2016 - June 2020**
B.Tech in Computer Science	*Vellore, India*

Relevant Coursework

- Machine Learning (Audit)
- ML in Healthcare
- Information Visualization
- Computer Vision
- Deep Learning
- Natural Language Computing (Audit)

Experience

University of Toronto	**Sept 2021 – Present**
Teaching Assistant	*Toronto, Canada*

CSCC11:Introduction to Machine Learning	*Winter 2022*
CSCA20: Introduction to programming	*Fall 2021*

NeuroPoly, University of Montreal	**Nov 2020 – August 2021**
Machine Learning Engineer	*Montreal, Quebec, Canada*

- Developed an open source software AxonDeepSeg - Axon / Myelin segmentation using Deep Learning.
- Implemented and integrated U-Net model for segmentation on Keras framework for histological data (SEM and TEM).
- Fine-tuned models resulting in a performance gain of **5%**, refactored **40% codebase** and performed an exhaustive comparative analysis with state-of-art methods.
- Researched and incorporated dynamic functionality for handling overlapping patch effect on microscopy images

CNRS, CerCo lab	**Dec 2019 - Jun 2020**
Visiting Deep Learning Research Intern	*Toulouse, France*

- Researched the influence of EEG on stimulus, stimulus on EEG, and EEG on EEG primarily for the occipital electrodes.
- Improved correlation value(r) by **13%** and improvised on the next **1 sec horizon time steps** in comparison to the baseline models using state-of-the-art time series models.
- Experimented the study; *"In Alpha Oscillations strong perceptual echoes exist at 10Hz frequency"* with various architectures - 1D CNN, LSTM, WaveNet, Conv-LSTM, ARIMA, and an ensemble of these models.

Publications

AxonDeepSeg: Automatic Myelin and Axon Segmentation Using Deep Learning	**July 2020**
(LINK)	*OHBM 2020, Canada*
High Dimensional Fuzzy Outlier Detection	**August 2019**
(LINK)	*ICONIP, Australia*
A Fuzzy Constraint Based Method for Outlier Detection	**August 2019**
(LINK)	*ICIC2019, China*

Technical Skills

Languages: Python, Shell Script, HTML
Developer Tools: VS Code, Google Cloud Platform
Technologies/Frameworks: PyTorch, NumPy, Scikit-learn, Pandas, Keras, OpenCV, Git, Docker, GitHub, AWS

Achievements / Awards

Vector Scholarship in Artificial Intelligence 2021	**September 2021**
Scholarship (LINK)	*Vector Institute and University of Toronto*
Charpak Lab France Scholarship	**September 2020**
Award and Scholarship (LINK)	*Government of France*
Dean List of Academic Intelligence	**2016 – 2020**
Award	*VIT University*
Special Achiever Award	**2019**
Award (LINK)	*VIT University*