Vasudev Sharma

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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

Experience

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

- TAing the course CSCA20: Introduction to programming.

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, C/C++, Shell Script, HTML
Developer Tools: VS Code, Google Cloud Platform
Technologies/Frameworks: PyTorch, Keras, OpenCV, Git, Docker, GitHub, AWS, Linux, MacOS

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*