

Vasudev Sharma

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🖱️ <https://vasudev-sharma.github.io>

🎓 Education

B.Tech in Computer Science

Vellore Institute of Technology (VIT)

2016 – 2020

CGPA: 9.49 / 10

📄 Publications

High Dimensional Fuzzy Outlier Detection

International Conference on Neural Information Processing (ICONIP 2019), Australia

12-2019

Authors: Vasudev Sharma, B.K Tripathy

AxonDeepSeg: Automatic Myelin and Axon Segmentation Using Deep Learning

Organization for Human Brain Mapping (OHBM 2020), Montreal, Canada

06-2020

Authors: Vasudev Sharma, Mathieu Boudreau, Stoyan Asenov, , Aldo Zaimi, Julien Cohen-Adad

A Fuzzy Constraint Based Method for Outlier Detection

International Conference On Intelligent Computing (ICIC2019), China

08-2019

Authors: Vasudev Sharma, Abhinav Nagpal, B.K Tripathy

Visualization of Data Mining Techniques for the Prediction of Breast Cancer with High Accuracy Rates

Journal of Computer Science (peer-reviewed)

01-2019

Authors: V Sharma, Raj Kumar Rajasekaran, Shreya Badhrinarayanan

👛 Experience

NeuroPoly Lab, University of Montreal

Machine Learning Engineer (Remote)

11-2020 – present | Montréal, Canada

- Developed a 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, Brain and Cognition Research Center (CerCo lab)

Visiting Deep Learning Research Intern (Undergraduate thesis)

12-2019 – 06-2020 | 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.

Council of Scientific and Industrial Research(CSIR)

Data Science Intern (remote)

01-2019 – 06-2019

- Worked on Evaluation of Science reporting, patent database analysis, wherein scrapped important reporters worldwide using Selenium and Maltego from LinkedIn, Twitter and report's publications
- Carried out geospatial visualization, data analysis of reporters and manually filled missing fields in the Science reporting database.
- Build a USPTO patent database, a US patent office, by web scrapping using BeautifulSoup, collating, data cleaning, and preprocessing.

National University of Singapore(NUS)

Undergraduate Research Intern

12-2018 – 01-2019

- Developed a Music Genre Classifier using Deep Learning under the guidance of Prof. WANG Wei at NUS.
- Extracted Music features(MFCC's and FBE's) from raw audio files via speech analysis using Librosa package on GTZAN and Million Song Dataset.
- Optimized and implemented various machine learning(SVM, Random Forest) and state of the art deep learning techniques(CNN, RNN, LSTM's).
- Performed Spectrogram and time-series waveform analysis of different genres.

Awards and Achievements

Charpak France Research Lab Scholarship

Government of France

05-2019

Awarded a fellowship by the government of France to take a sponsored internship at a research institute in France. A total of **21 interns** were selected from all over India for this prestigious and competitive scholarship.

Dean's list of Academic Excellence

VIT University

For good academic performance and securing department rank **3** among 2,000 students over the last 3 years at VIT Vellore. Receiving scholarships and awards for the same.

AICTE - INAE Travel Grant

Government of India

08-2019

Awarded a prestigious student travel grant by Government of INDIA to present my paper (outlier detection) at ICIC2019 conference, CHINA

Excellent Student Award

National University of Singapore

01-2019

Awarded with the Excellent Student Award at NUS for the project on "Music Genre Classification" among all the Interns.

Speical Acheiver Award

VIT University

2019

Every academic year, the "**Special Achievers Award**" is given to the students with exceptional performance in the field of academics; I was awarded this for publications at international conferences.

Udacity PyTorch Deep Learning Scholarship

Facebook AI, Udacity

09-2018

Among 10,000 aspirants to receive a scholarship and to study how to build deep neural networks using PyTorch.

VITEEE2016 Scholarship

VIT University

2016

Recipient of VITEEE2016 scholarship among pool of **212,000** applicants.

Skills

Programming Languages

Python, TensorFlow, OpenCV, Keras, C/C++, Shell Script, HTML, JavaScript, CSS

Databases

MySQL / SQL, MongoDB

Computing Environment, Frameworks, Simulators

MATLAB, R-Studio, Hadoop, GIT, Docker, XAMPP

Operating Systems

Linux, Mac OS X, Windows

Volunteer

Child Rights and You

Volunteer

2016 – 2020

- NGO for helping out children from the low-income family background.
- Working towards providing a safe space to grow up for children in India.

Jeevan Arth Foundation

Volunteer

2017 – 2020

-NGO that aims to provide special children with education and training facilities to enhance their capabilities and rehabilitate themselves in society.
-Engaged with children with disabilities in a creative environment.

TensorFlow

Mentor, Google Code In 2019

12-2019 – 02-2020

As a mentor for Google Code-In 2019, a contest for students between the ages of 13-17, I was responsible for guiding the students to make their journey to open-source development.

Cognet.ai

Cofounder

2018 – present

Cognet.ai is a research group in VIT which focuses on areas related to Computer Vision and Deep Learning.

- Blog writing, organising events in University.
- Teaching college students who are passionate and managing workshops of the same.

Rotract Club, VIT University

Board Member

2018 – 2019

Rotract Society is a nonprofit organization that aims to uplift different sections of society.

My job included organizing different events like :

- Blood Donation Camps.
- Drawing and singing competition for underprivileged children.