Anirudha Kemtur

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anirudhk686
AKemtur

Education

2020–Present **Masters in Computer Science**, *MILA - Quebec AI Institute - University of Montreal*, Montreal, Canada.

2015–2020 **B.E.(Hons.) in Computer Science**, *Birla Institute of Technology and Science (BITS) Pilani*, Pilani Campus, India, *CGPA 8.76/10*.

2015–2020 **M.Sc.(Hons.) in Economics**, *Birla Institute of Technology and Science (BITS) Pilani*, Pilani Campus, India, *CGPA 8.76/10*.
5 Year Dual Degree Program

Software skills

Expertise Brain data analysis
Machine learning : Deep reinforcement learning, Computer vision

Languages Professional: Python
Intermediate: Java, C, Verilog

Libraries Pytorch, TensorFlow, Open-AI gym , Django

Experience

September'20–Present **Graduate Research Assistant**, *MILA - Quebec AI Institute and Computational and Cognitive Neuroscience Laboratory*, Université de Montréal, Montreal,Canada.
Dr. Karim Jerbi and Dr. Pierre Bellec
- Characterization of human brain activity under naturalistic stimulations for developing individual artificial neuronal models.
- Data recorded while participants playing Shinobi 3 video game.
- Training Reinforcement learning algorithms to play like the subjects, while exhibiting network dynamics similar to the brain data of subject.

February'20–August'20 **Research Intern**, *Computational and Cognitive Neuroscience Lab*, Université de Montréal, Montreal,Canada.
Dr. Karim Jerbi
- Explored similarities between sleep and anaesthesia using EEG data.
- Developed methods to domain transfer between sleep and anaesthesia using Domain adversarial neural networks.
- Developed visualisation techniques using guided backpropogation/deepdream to extract brain features from the trained models.

September'19–December'19 **Bachelor Thesis**, *Rationality Enhancement Group*, Max Planck Institute for Intelligent Systems, Tübingen, Germany.
Dr. Falk Lieder
- Developing strategies robust to model-misspecification using Meta-level Reinforcement learning and Baysian Inference.
- Project details in Publication below.

May'19–August'19 **MITACS Globalink Research Intern**, *Computational and Cognitive Neuroscience Lab*, Université de Montréal, Montreal, Canada.
Dr. Karim Jerbi
- Study of EEG sleep data using Convolutional neural networks.
- Project details in Publication below.

Jan'19–May'19 **Research Assistant**, *CSIR - Central Electronics Engineering Research Institute*, Pilani, India.
Dr. J L Raheja
- Worked on control of Robot manipulator using Deep reinforcement learning techniques.

June'18–
August'18 **Research Intern**, *Computational Neuroscience lab, IIT- Madras*, Chennai, India.
Prof. Dr. V Srinivasa Chakravarthy
- Worked on Computational Neuro-modeling of Reinforcement learning in the brain.

Minor Projects

June'17 **Antartic weather data analysis**.
- Analyzed temperature data with the Autoregressive Integrated Moving Average Model.
- Forecast was also done based on the obtained model.

[Project Report] [Code]

July'17 **Facial recognition system using Convolutional Neural Network**.
- Followed a three step approach: face detection,encoding and comparison.
- Transfer Learning was used to generalize the model.

[Code]

Dec'16 **Stock Market Simulator**.
- A trading platform built using Django, built for college technical fest
- Server hosted on LAN, participants could register and trade with their mobile.

[Code]

Coursework

Computer Science Convolutional Neural Networks for Visual Recognition, Deep Reinforcement learning , Machine Learning, Data Structures and Algorithms, Object Oriented Programming

Mathematics Probablity and Statistics,Econometric methods,Linear Algebra, Calculus

Publications

December'20 **Improving Human Decision-Making using Metalevel-RL and Bayesian Inference**, *Workshop on Challenges of Real World Reinforcement Learning, NeurIPS 2020*.

June'20 **Leveraging Machine Learning to Automatically Derive Robust Planning Strategies from Biased Models of the Environment**, *Proceedings of the 42nd Annual Conference of the Cognitive Science Society(p. 2405-2411), CogSci 2020*.

[Paper] [Video]

May'20 **Unraveling the neural signatures of dream recall in EEG: a deep learning approach**, *MAIS 2020*.

[Abstract] [Video]

Sleep and Anasthesia: Exploring domain adversarial adaptation, *To be submitted*.

EEG sleep fingerprinting: subject identification with brain data, *To be submitted*.

Organisations

Aug'15–
May'20 **Association for Computing Machinery**, *BITS-Pilani Student Chapter*, Core Team.
- Chapter has been awarded the Best Student Chapter in India for 3 consecutive years with a recognition from ACM International.

[Website]

Awards/Achievements

September'20 **Mitacs Graduate Fellowship Award**.

February'20 **Mitacs Research Fellowship Award**.

April'19 **Mitacs Globalink Scholarship**.

June'15 **Jee Mains Exam - All India Rank-3320**.
- 1.3 Million Students appeared for the exam