

Anirudha Kemtur

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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* 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
- Working on Video game component of Courtois Neuromod Project.
 - 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 backpropagation/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 Bayesian 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.

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 Geometric data science, Convolutional Neural Networks for Visual Recognition, Deep Reinforcement learning , Machine Learning, Data Structures and Algorithms, Object Oriented Programming

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

Publications

- December'20 **Improving Human Decision-Making using Metalevel-RL and Bayesian Inference**, *Kemtur and Jain et al. 2020*, NeurIPS RWRL 2020.
- June'20 **Leveraging Machine Learning to Automatically Derive Robust Planning Strategies from Biased Models of the Environment**, *Kemtur and Jain et al. 2020*, 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**, *Kemtur and Ghosh et al. 2020*, MAIS 2020.
- [\[Abstract\]](#) [\[Video\]](#)
- Sleep and Anesthesia: Exploring domain adversarial adaptation**, *To be submitted.*

Conferences

- 2020 **NeurIPS** , **CogSci**(Annual Meeting of the Cognitive Science Society) , **MAIS**(Montreal AI Symposium) , **MAIN**(Montreal AI and Neuroscience conference).
- 2019 **RLDM** (Reinforcement Learning and Decision Making Conference).

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.

Awards/Achievements

- December'20 **Microsoft AI Grant**, Financial award of 4000 CAD.
- September'20 **Mitacs Graduate Fellowship Award**, Financial award of 15000 CAD to pursue masters degree .
- September'20 **University of Montreal Matching Award**, Graduate tuition fee exemption scholarship of 15000 CAD..
- February'20 **Mitacs Research Fellowship**, Financial award of 6000 CAD to participate as research exchange student in Canada for 4 months.
- April'19 **Mitacs Globalink Scholarship**, Financial award of 5000 CAD to participate as research intern in Canada for 3 months.
- June'15 **Jee Mains Exam - All India Rank-3320**, 1.3 Million Students appeared for the exam.