Anirudha Kemtur

anirudha.kemtur@gmail.com
anirudha-kemtur
AKemtur

Education

2020–Present **Masters in Computer Science**, *MILA - Quebec AI Institute - University of Montreal*, Montreal, Canada, *GPA 3.8/4*.

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

Experience

September'20–Present **Graduate Research Assistant**, *MILA - Quebec AI Institute*, Université de Montréal, Montreal,Canada.
Dr. Karim Jerbi and Dr. Pierre Bellec
- Working on Courtois Neuromod Project where human brain and gameplay data is collected while participants play videogame inside a fMRI brain scanner.
- Trained Imitation learning networks to play the videogame while exhibiting gameplay style similar to subjects.
- Developed models to encode brain data from activations of imitation learning network.
[Article] ***Skills:*** *Computer vision, Deep Reinforcement Learning, Imitation learning*

February'20–August'20 **Research Intern**, *Computational and Cognitive Neuroscience Lab*, Université de Montréal, Montreal,Canada.
Dr. Karim Jerbi
- Developed methods to do domain transfer learning between sleep and anaesthesia human brain timeseries data using Domain adversarial neural networks.
- Developed pipeline using guided backpropogation to visualize brain features extracted from the trained models.
[Article] ***Skills:*** *Transfer learning, Domain adaptation, Feature visualization*

September'19–December'19 **Bachelor Thesis**, Max Planck Institute for Intelligent Systems, Tübingen, Germany.
Dr. Falk Lieder
- Trained deep neural networks to discover strategies robust to Human biases using Meta-level Reinforcement learning and Bayesian Inference.
- Discovered strategies was taught to humans and was shown it improved their decision making.
[Article] ***Skills:*** *Sequence modelling, Meta-RL, Bayesian Inference*

May'19–August'19 **MITACS Globalink Intern**, *Computational and Cognitive Neuroscience Lab*, Université de Montréal, Montreal, Canada.
Dr. Karim Jerbi
- Study of EEG sleep data using Convolutional neural networks.
[Article] ***Skills:*** *Computer vision, Medical Imaging, Neuro-AI*

Jan'19–May'19 **Research Assistant**, *Council of Scientific and Industrial Research India - CEERI*, Pilani, India.
Dr. J L Raheja
- Worked on control of Robot manipulator using Deep reinforcement learning techniques.

May'17–July'17 **Summer Intern**, *National Centre for Antarctic and Ocean Research*, Goa, India.
Mr. Sakthivel Samy
- Antarctic weather data analysis and forecasting using ARIMA model.

Selected Publications

August'22 **AI-based modeling of brain and behavior: Combining neuroimaging, imitation learning and video games**, *Kemtur et al. 2022*, Conference on Cognitive Computational Neuroscience 2022.
[Article]

June'22 **Comparing sleep and anesthetic-unconsciousness using Domain adversarial neural networks and EEG**, *Kemtur and Ghosh et al. 2022*, OHBM 2022.
[Article] [Video]

June'22 **Taking a deep look at the brains of high and low dream recallers: Combining deep convolutional neural networks and sleep EEG**, *Kemtur and Ghosh et al. 2022*, OHBM 2022.
[Article] [Video]

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.
[Article] [Video]

Invited talks and Presentations

Invited talks **Mitacs-MTL event, Montreal** - Invited as panelist to share my research journey and discuss AI opportunities in Montreal with over 300 international mitacs interns.(2022)

Department of Education - Govt of India, Delhi - Invited to share feedback and recommendations to improve India-Canada research collaborations.(2020)

Conference Presentations CCN-San Francisco (2022) , OHBM-Glasgow (2022) , MAIN-Montreal (2021) , NeurIPS-Virtual (2020), CogSci-Toronto (2020)

Skills

Expertise Computer vision, Medical imaging , Sequential modelling , Deep reinforcement learning

Languages Proficient:: Python

Familiar: Java, C, Verilog

Libraries Proficient:: PyTorch, Matplotlib, scikit-learn, Pandas, Open-AI gym

Familiar: TensorFlow, Keras, statsmodel

Selected Awards and Honors

January'21 **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.

August'19 **BITS-Pilani Thesis scholarship**, Financial award of 100000 INR to pursue off-campus bachelor thesis in Germany.

April'19 **Mitacs Globalink Scholarship**, Financial award of 5000 CAD to participate as research intern in Canada for 3 months.

August'15-August'18 **ACM - Best Student Chapter(India) Award for 3 consecutive years**, Key member of BITS-Pilani Association for Computing Machinery Student chapter. .

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

Coursework

Computer Science Deep Learning and Applications, Deep Reinforcement learning, Geometric data Analysis, Applied Machine Learning, Data Structures and Algorithms, Object Oriented Programming

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

Finance Security Analysis and Portfolio management, Macroeconomics, Business Analysis and Valuation

List of references

Dr. Karim Jerbi, *Graduate research supervisor*, MILA, University of Montreal [contact].

Dr. Pierre Bellec, *Graduate research supervisor*, University of Montreal [contact].

Dr. Falk Lieder, *Bachelors thesis supervisor*, Max Planck Institute for Intelligent Systems [contact].