Tejas Shivakumar Kasetty

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Education

2022 - Present	**Université de Montréal, Montreal**, *M.Sc in Computer Science*. Co-supervised by ***Guillaume Lajoie*** & ***Dhanya Sridhar*** (*GPA - 4.15/4.3*)
2014 - 2018	**PES University, Bengaluru**, *B.Tech in Computer Science*.

Publications

ICML 2025	***In-context learning and Occam's razor***. Eric Elmoznino*, Tom Marty*, **Tejas Kasetty**, Leo Gagnon, Sarthak Mittal, Mahan Fathi, Dhanya Sridhar, Guillaume Lajoie
NeurIPS Workshop 2024	***Evaluating Interventional Reasoning Capabilities of Large Language Models***. **Tejas Kasetty***, Divyat Mahajan, Gintare Karolina Dziugaite, Alexandre Drouin, Dhanya Sridhar

Research Experience

Sept 2024 - Present	**Graduate Student Researcher**, *Mila*, Montreal, Canada. ○ Part of Guillaume Lajoie's Lab ○ Working on formalizing compositionality and compositional generalization.
June 2023 - Aug 2024	**Research Intern**, *Mila*, Montreal, Canada. ○ Analyzed and bench-marked the causal reasoning ability of Large Language Models ○ Linking *In-context learning*(as a meta-learning algorithm) to Occam's razor with preference for simple models.
May 2017 - April 2018	**Research Intern**, *Center for Pattern Recognition and Machine Intelligence(CPRMI) Lab, PES University*. ○ Worked on Computer Vision projects in the summer and for my undergraduate thesis. ○ It involved using neural networks and other machine learning techniques to solve problems in the field of Face Recognition and Image de-blurring.

Industry Experience

May 2023 - Nov 2023	**ML Developer Intern**, *Intellisports.Inc*, Montreal, Canada. ○ Human Activity Recongition using Intertial Measurement Units(IMU) data. ○ Using deep learning and sequence-modeling approach to accurately recognise the activity and count repetitions.
Jun 2018 - Jan 2020	**Software Development Engineer (Big Data and ML)**, *MiQ*, Bengaluru, India. ○ Implemented custom libraries and services with support for various ML algorithms and functionalities to work on big-data using Spark. ○ It helped analysts and data-scientists scale-up and automate their data pipelines and train complex machine learning models on big-data.
Jan 2018 - July 2018	**Software Development Intern (Full stack)**, *MiQ*, Bengaluru, India. ○ Developed a web application where users can easily create, run and even schedule workflows. ○ Refactored the back-end from monolithic to a micro-service architecture. ○ Migrated the service to Kubernetes for fast deployment and release. It also helped easily scale-up and scale-down the service based on traffic and other requirements.

Other Projects

Jan 2023 - April 2023	**Memory Capacity and Robustness in RNNs**, *Mila*. ○ Studying the dynamics in RNNs to better understand its capacity and robustness to accurately store/retrieve information. ○ Used Hopfield networks to store and recall information emulating the small-world network connectivity seen in the neocortex, which is hypothesized to be the key factor for high capacity.

Jan 2023 - Present	**Quick-Recipe: Knowledge Extraction from cooking videos**, *UdeM*. ○ Experimenting with a multi-model approach (text & video) to effectively extract relevant information from cooking videos. ○ Experimenting with TSM models to extract object & action knowledge from the video clips. ○ Using attention mechanism for text-to-video temporal grounding.
Aug 2022 - Dec 2022	**NHL Analytics**, *UdeM*. ○ Built an end-to-end data pipeline on *National Hockey League (NHL)* data. ○ Built a tool to easily query and visualize play-by-play data with important statistics on any ice-hockey game played from 2018-2021. ○ Built an ensemble model to make (shot/miss/goal) predictions on a play during a game. ○ Deployed an web-application that gives real-time predictions with key-insights and statistics on a live NHL game.
Dec 2017 - May 2018	**Enhancement of Degraded CCTV footage for Forensic Analysis**, *CPRMI Lab*. ○ Implemented various image processing techniques like adaptive histogram equalization, gamma correction and interactive functionalities to reduce noise and improve the quality of images obtained from a CCTV. footage.

Relevant Skills

Languages	Python, Matlab, Scala, Java, C, C++, LaTeX
Frameworks & Libraries	PyTorch, PyTorch Lightning, Hydra, TensorFlow, Spark, Scikit-learn, Numpy, Pandas
Utilities	Git, Jupyter, Databricks and Qubole Notebooks
Communication	English (proficient)

Relevant Courses

Online	Introduction to Neuroscience (MIT Open Courseware)
Undergrad	Linear Algebra, Calculus, Probability and Statistics, Data Structures and Algorithms, Digital Image Processing.
Graduate	Foundations of Machine Learning, Learning Representations (Deep Learning), Dynamical Systems

Honors and Awards

2019	Recipient of **Best Newcomer Award**, *MiQ*, Bengaluru, India.

Extra Curriculars

Sept 2023 - Sept 2024	**Student Affairs Committee Member (Content Manager)**, *UNIQUE, Montreal*. Part of student-run committee within the Unifying Neuroscience and AI - Quebec (UNIQUE) research cluster designed to support and empower students working at the intersection of neuroscience and AI within Quebec
Feb 2023 - June 2023	**Organizing USS 2023 (Volunteer)**, *UNIQUE, Montreal*. I have volunteered as an organizer for UNIQUE Student Symposium 2023. A platform for students doing research in neuroscience and AI to showcase their work. I was responsible for handling the logistics of the event.
June 2019	**World Environment Day (Volunteer)**, *Rotaract, MiQ*. I volunteered in an event organized by Rotaract to spread awareness of climate change and inform the public on proper waste management. We planted 500 trees in and around the office campus in Bengaluru.
2014 - 2017	**PES University Football Team**. I was part of the university football team and represented the university in multiple tournaments.