Barleen Kaur

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Education

2017-2020 **M.S. in Computer Science**, *McGill University, Canada*, GPA: **3.77/4**.

Relevant Coursework: Applied Machine Learning, Reinforcement Learning, Probabilistic Graphical models, Natural language Processing, ML and NLP in Software Engineering, Social Media Analytics.

2011-2015 **B.Tech. in Computer Science And Engineering**, *IGIT (now IGDTUW), Guru Gobind Singh Indraprastha University, India*, CPI: **81.07/100**.

Research Experience

Jul'18- **Master's Thesis**, *McGill University and Mila*, Montreal, Canada.
Present
- Worked on transfer learning techniques across neurodegenerative diseases in the context of pathology segmentation in medical images using Deep Learning under the supervision of Prof. Doina Precup and Prof. Tal Arbel. This research was funded by **NSERC**.
- Explored various transfer learning strategies like fine-tuning, multi-task representation learning, and a novel coupling of the above methods with cascaded networks, specifically for knowledge transfer across neurodegenerative diseases.

Work Experience

Jul'15-Jul'17 **Associate IT Consultant**, *Oracle India Private Limited*, Noida, India.
- Worked on developing an application portal that served as a data inventory for reporting purposes and tracking the workload.
- Planning and execution of IT deliveries as per client requirements within deadlines.

Publications

DART 2019 **Barleen Kaur**, et.al., *Improving Pathology Segmentation Via Transfer Learning Across Diseases*. DART workshop, MICCAI 2019.[PDF] [Slides]

NAACL 2018 Kian Kenyon-Dean*, Eisha Ahmed*, Scott Fujimoto[†] Jeremy Georges-Filteau[†] Christopher Glasz[†] **Barleen Kaur**[†] et.al., *Sentiment Analysis: It's Complicated!*, NAACL HLT 2018. [PDF]

Skills & Abilities

Languages   Python, Java, C, C++, HTML

IDE Used   PyCharm, Eclipse, Netbeans, Visual Studio

Techologies   Pytorch, tensorflow, numpy, pandas, sklearn, matplotlib, scipy, seaborn, Apex, comet.ml

Databases   MySQL

Projects

Mar'19- **Temporal regularization in Control for MDPs**, *McGill University and Mila*, Montreal, Canada.
Aug'19
- Worked on new formulations for SARSA and Q-learning to reduce the variance in the action value function by exploiting temporal consistency in the problem.
- We experimented our method on a suite of atari and non-atari games.[PDF]
- We observed a faster learning and a marginal improvement in the performance on various environments.

Sept'17- Dec'17	**Sentiment Analysis: It's complicated!**, *McGill University*, Montreal, Canada. ○ Proposes to include a new class of sentiment known as "Complicated" to accommodate those tweets/texts which don't belong to any established class of the sentiment. Also, discusses to include tweets with high annotator disagreement when constructing a dataset. [PDF]
Nov'17- Dec'17	**Identifying duplicate Quora Question pairs**, *McGill University*, Montreal, Canada. ○ We used text vectorization techniques like bag of words, word2vec, and doc2vec to generate word embeddings and obtained an accuracy of 70.8% using various classifiers like Naive-Bayes, Linear Support Vector Machines, and Logistic Regression.[PDF]
Nov'14– May'15	**Deadline driven Min-Min load balanced Task scheduling algorithm in Cloud**, *IGDTUW*, Delhi, India. ○ Worked on an algorithm that generates a balanced schedule for allocating a set of tasks to a set of available resources considering factors like failure rate of resources, task deadline, and load balancing. This project was based on an open-source toolkit called **CloudSim** written in Java.
Jun'14– Aug'14	**Management Information Systems for Zoological Survey of India**, *National Informatics Centre*, Delhi, India. ○ Participated in resource gathering phase and contributed in drafting SRS document. Also, developed a prototype module (on .Net) where scientists could search for the complete list of undergoing projects to get details.

Achievements

Jul 2019	Attended **DLRL Summer School 2019** at Edmonton, Canada.
Jul 2016	Scored **317/340** in GRE General test with **170** in Quantitative Reasoning and 147 in Verbal Reasoning in July'16.
Jul 2011	Secured a rank of **1742** in IPUCET, a university level engineering entrance exam in Delhi.
May 2009	Overall **topper and Maths topper in CBSE 10th boards** at the school level.

Position of Responsibility

Jun 2020	Teaching assistant at the AI4SocialGood Summer Lab, Mila, Montreal. I was responsible for assisting a cohort of five women on various topics in machine learning and deep learning.
2017-2020	**Teaching assistant** for courses: Algorithms and Data Structures (Winter 2020), Introduction to Computer Science (Fall 2018), Algorithms & Data structures (Winter 2018) and Foundations of Programming (Fall 2017) at McGill University.
Dec 2018	Volunteered at the thirty-second conference on Neural Information Processing Systems (**NeurIPS'18**).
2015	Past member of Emergency Response Team (ERT) for Oracle India Pvt Ltd, Noida.
2013-2014	Led a team to build a website for the **IEEE** student branch of IGDTUW, Delhi.
2014	Core creative team member of **Taarangana** - the first cultural festival of IGDTUW.

Extra-Curricular

2017	Winner of **ConVerge** - an online quiz competition conducted by Oracle India Pvt. Ltd.
2013-2014	Conducted various technical seminars and workshops in college.
Jun'14– Nov'14	Participated in a six-months long mentorship program in partnership with Qualcomm encouraging female students to develop skills on Effective Communication, Networking, Knowledge Sharing and Leadership.
1998-2008	**Lead vocalist** in my school's music team and won various inter-school level singing competitions.

Personal Information

Languages	English, Hindi, Punjabi
Hobbies	Singing, drawing, biking, and playing games.