

Dhruv Kumar

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EDUCATION	University of Waterloo , Ontario, Canada	Sep 2018- Present
	M. Math.(Thesis) in Computer Science GPA: 88.5 / 100	
	Indian Institute of Information Technology, Allahabad , U.P., India	Jul 2012- Jun 2016
	B. Tech.(Hons) in Information Technology GPA: 8.68 / 10.00 (9.07 - Last 2 years)	
SKILLS	Relevant Coursework - Deep Learning, Trust and Online Social Networks, Information Retrieval, Artificial Intelligence, Natural Language Processing, Cognitive Process Modelling, Optimization Techniques, Data Mining, Probability & Statistics, Mathematics(I, II, III). Languages - C, C++, Python, Java, Javascript, HTML, PHP and SQL. Libraries - Pytorch, Tensorflow, Keras, Gym, Scikit-Learn, Pandas, and d3.js Frameworks - AngularJS, Node.js, MongoDB, Flask, Spring, MyBatis and Struts	
RESEARCH EXPERIENCE	University of Waterloo ,	
	Research Assistant/Sirius Blockchain Research Group	Sep 2018-Present
	▪ Working on creating an efficient Data Analytics layer on top of Hyperledger Fabric.	
	Research Assistant/Data Science Lab	Sep 2018-Present
	▪ Working on applying Natural Language Methods to classify toxic and abusive speech in online social networks.	
	Teaching Assistant	
INDUSTRY EXPERIENCE	▪ CS 115: Introduction to Computer Science, Fall 18.	
	▪ CS 230: Introduction to Computers and Computer Systems, Winter 19	
	Universität Paderborn , Paderborn, Germany	Jan 2016-Jun 2016
	Studentische Hilfskraft(Student RA) at Analytic Information Systems and Business Intelligence Lab (AIS-BI)	
	▪ Bachelor's Thesis: "Compressed Knowledge transfer via Factorization Models in Recommender Systems". Developed an algorithm to incorporate metadata in Factorization Machines, thus improving their accuracy.	
	▪ Face recognition in videos: built a web application on top of Microsoft's Project Oxford.	
	Arcesium(DE Shaw Group) , Hyderabad, India	Jul 2016-May 2018
	Software Engineer	
	▪ Worked as a full stack engineer, designing Fund and Investor Accounting solutions for Hedge Funds.	
	▪ Member of the team to onboard J.P.Morgan onto the platform.	
	Citigroup , Pune, India	
	Software Engineering Intern	May 2015-Jul 2015
	▪ Trading Controls application for Equities Team using MEAN stack and d3. Received a full-time offer.	
PUBLICATIONS	▪ "Inclusion of Semantic and Time-Variant Information Using Matrix Factorization Approach for Implicit Rating of Last.Fm Dataset," in <i>Springer Berlin Heidelberg - Arabian Journal of Science and Engineering</i> May 2016. ▪ "Neural Attention Models for Online Abuse Detection," submitted in <i>Canadian AI 2019</i> .	
ACADEMIC PROJECTS	Bi-Directional Attention Flow for Question Answering	Sep 2018 - Nov 2018
	▪ Implemented the Bi-Directional Attention Flow(BiDAF) model from scratch in Tensorflow over the SQuAD1.1 dataset as part of the course project for the Deep Learning class.	
	Transfer Learning for Image Classification	Oct 2018
	▪ Trained a ResNet50 and VGG16 models using Transfer Learning on Cifar100 to obtain an accuracy of 78.53%.	
	Analysis of Time Aware and Semantic Feature Based Music Recommender System	Jul 2015 - Nov 2015
	▪ Proposed a semantic-Joint Matrix Factorization approach to incorporate semantic(geographic) and time based information for items in addition to user's implicit feedback to enhance the accuracy of the model.	

Information Extraction and Sentiment Analysis

Jul 2014 - Nov 2014

- Applied NLP and graph propagation algorithms to predict and rate five most popular features of any item using Amazon user reviews which were filtered through a Naïve Bayes spam filter.

Faculty Feedback Portal

Jan 2013 - Apr 2013

- Developed an institute wide web based application where students could anonymously give feedback about faculty, replacing the existing offline activity. Graphically summarized the feedback for the faculty to view.

**PERSONAL
PROJECTS****Text classification using Deep Learning**

Dec 2018 - Present

- Used deep learning methods including multiple attention models for text classification implemented in Pytorch. The models are inspired not just by the state-of-the-art in classification but also by different tasks in NLP such as text entailment, Question Answering, etc.

RL agents on OpenAI Gym

Aug 2017 - Dec 2017

- Applied Reinforcement Learning methods like Policy Gradient and Q-Learning with Neural Networks to learn Open Gym environments like Cartpole, MountainCar and Pong.

Learning the writing style

Apr 2017 - May 2017

- Implemented a character level RNN model from scratch which learns writing style from my Bachelor's Thesis.

Android Application for Effervescence 2014

May 2014 - Aug 2014

- Lead a team to design and develop the first ever *Android Application* for our annual festival Effervescence.

**ACHIEVEMENTS &
EXTRA-CURRICULAR**

- Received International Masters Student Award and University of Waterloo Entrance Scholarship for the graduate studies.
- Stood in the top 0.2% in the All India Engineering Entrance Examination 2012.
- Worked as the Events Head of the annual cultural cum technical festival *Effervescence* 2014.
- Represented the college band as a drummer in various events.