

Chitwan Saharia

AI Resident, Google Brain, Toronto

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Education

B.Tech. with Honors in Computer Science and Engineering **2015-19**
Indian Institute of Technology, Bombay, India

Interests

Natural Language Processing, Generative Models, Reinforcement Learning

Professional Experience

Google Brain **Toronto**
AI Resident *Oct 2019 - Current*

- Spending most of my time doing research and learning from my mentors and peers.
- Research Areas: Sequence generative models, Retrieval models, Few Shot learning.

Mila **Montreal**
Research Intern *May 2018 - August 2018*

- Worked on creating benchmarks for Grounded Language Learning (BabyAI Project).
- Advised by Prof. Yoshua Bengio, and Dzmitry Bahdanau.
- Research Areas: Imitation Learning, Goal Conditioned RL.

Mila **Montreal**
Research Intern *May 2017 - August 2017*

- Worked on sequence to sequence hierarchical dialog models.
- Advised by Prof. Yoshua Bengio.
- Research Areas: Language Models, Seq2Seq Models.

Publications

- **Non-Autoregressive Machine Translation with Latent Alignments**
Chitwan Saharia*, William Chan*, Saurabh Saxena, Mohammad Norouzi
Empirical Methods in Natural Language Processing (EMNLP), 2020
- **Imputer: Sequence Modelling via Imputation and Dynamic Programming**
William Chan, Chitwan Saharia, Geoffrey Hinton, Mohammad Norouzi, Navdeep Jaitly
International Conference on Machine Learning (ICML), 2020
- **Combating False Negatives in Adversarial Imitation Learning for Instruction Following**
K. Zolna*, Chitwan Saharia*, L. Boussieux*, David H, Maxime CB, D Bahdanau, Yoshua Bengio
AAAI Conference (Student Abstract Track), 2020
NeuRIPS Deep Reinforcement Learning Workshop, 2020
- **A Tale of Two Modalities for Video Captioning**

P. Joshi*, Chitwan Saharia*, Vishwajeet Singh, D. Gautam, G. Ramakrishnan, P. Jyothi
Workshop on Multi-modal Video Analysis & Moments in Time Challenge, ICCV, 2019

- **BabyAI: First Steps Towards Grounded Language Learning With a Human In the Loop**
Maxime CB, Dzmitry Bahdanau, Salem L, Lucas W, Chitwan Saharia, Thien HN, Yoshua Bengio
International Conference on Learning Representations (ICLR) 2019

Other Research Experiences

Bachelor's Thesis [Talk]

IIT Bombay

Advisors : Prof. Preethi Jyothi and Prof. Ganesh Ramakrishnan

August 2018 - May 2019

- Analyzed the role of audio and visual modalities in Video Captioning.
- Research Areas: Video Captioning, Hierarchical sequence models.

R&D Project [Report]

IIT Bombay

Advisor : Prof. Suyash Awate

August 2018 - December 2018

- Analyzed impact of calibration techniques on cell segmentation tasks.
- Research Areas: Calibration in Neural Networks, Uncertainty Estimations.

Seminar [Report]

IIT Bombay

Advisor : Prof. Pushpak Bhattacharyya

January 2018 - April 2018

- Explored the literature on machine learning and rule based models for sentiment analysis.
- Research Areas: Sentiment Analysis

Scholastic Achievements

- Secured All India Rank 148 in IIT JEE Examination (2015) among 150 thousand candidates.
- Secured 99.9 percentile in JEE-Main (2015) out of 1.5 million candidates.
- Recipient of Kishore Vaigyanik Protsahan Yojna Fellowship instituted by the Department of Science and Technology, Govt. of India.

Positions of Responsibility

- **Teaching Assistant**
 - Object Oriented Programming at IIT BombayX
 - Computer Programming at IIT Bombay
- **Reviewer**
 - International Conference on Learning Representations (ICLR), 2021

Relevant Academic Coursework

- **Machine Learning** - Foundations of Machine Learning, Automated Speech Recognition, Probabilistic Graphical Models, Digital Image Processing, Foundations of Intelligent Learning Agents, Artificial Intelligence, Data Analysis and Interpretation.
- **Mathematics** - Calculus, Linear Algebra, Differential Equations, Numerical Analysis.
- **Computer Science** : Discrete Structures, Data Structure and Algorithms, Database Systems, Operating Systems, Implementation of Programming Languages, Automata Theory.