## Koustuv Sinha


CONTACT INFORMATION

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RESEARCH INTERESTS

**S**ystematicity in Natural Language Processing, Neural Reasoning on Language, Linguistics, Dialog Systems

EDUCATION

**McGill University**, Montreal, QC, Canada

PhD Student, School of Computer Science, September 2018 - present

- Advised by: Dr Joelle Pineau
- Collaborators: Dr Adina Williams, Dr William L. Hamilton, Dr Timothy J o'Donnell
- GPA : 4.0

MSc Thesis, School of Computer Science, September 2016 - August 2018

- Thesis: Hierarchical text classification of large-scale topics: a Neural approach
- Advised by: Dr Derek Ruths, Collaboration with : Dr Joelle Pineau
- GPA : 3.94/4

RESEARCH EXPERIENCE

**Facebook AI Research (FAIR)**, Montreal, QC, Canada

*PhD Research Intern* **Jan 2019 - Present**

- Collaborations from NLP group: Dr Adina Williams, Dr Douwe Kiela, Dr Dieuwke Hupkes, Dr Robin Jia
- Collaborations from Covid X-ray diagnosis group: Anuroop Sriram, Matthew Muckley
- Collaborations from Core ML group: Shagun Sodhani

**Samsung Advanced Institute of Technology**, Montreal, QC, Canada

*Research Intern* **Summer 2018**

- Collaborations from Language Technology group: Sanghyun Yoo

**McGill University**, Montreal, QC, Canada

*Research Associate*, Dialog Group - *RL Lab* / Mila **June 2017 - present**
Supervised by Dr. Joelle Pineau

*Research Associate, Network Dynamics Lab* **September 2016 - August 2018**
Supervised by Dr. Derek Ruths and collaboration with David Jurgens

*Research Associate, txtLab - NovelTM Project* **September 2016 - August 2017**
Supervised by Dr. Andrew Piper

**Indian Institute of Technology, Kanpur**, India

*Senior Project Associate* **September 2015 - March 2016**
Department of Computer Science & Engineering
Supervised by Dr. Arnab Bhattacharya & Dr. Koumudi Patil

## Teaching Experience

**McGill University**, Montreal, QC, Canada

*Teaching Assistant*, COMP 652 Machine Learning — **Fall 2018**
Riashat Islam, Dr Audrey Durand

*Teaching Assistant*, COMP 551 Applied Machine Learning — **Fall 2017**, **Winter 2018**
Prof. Dr. Joelle Pineau, Dr Herke Van Hoof, Sarath Chandar, Ryan Lowe

*Teaching Assistant*, COMP 102B Computers & Computing — **Winter 2017**
Prof. Dr. Derek Ruths

*Teaching Assistant*, COMP 189 Computers & Society — **Fall 2016**
Prof. Dr. Derek Ruths

## Publications

- Koustuv Sinha, Prasanna Parthasarathi, Joelle Pineau, Adina Williams; *UnNatural Language Inference*, Association of Computational Linguistics (ACL), 2021, **Oral**, **Outstanding Paper Award**
- Joelle Pineau, Philippe Vincent-Lamarre, Koustuv Sinha, Vincent Larivière, Alina Beygelzimer, Florence d'Alché-Buc, Emily Fox, Hugo Larochelle; *Improving Reproducibility in Machine Learning Research (A Report from the NeurIPS 2019 Reproducibility Program)*, Journal of Machine Learning Research (JMLR), 2020
- Nicolas Gontier, Koustuv Sinha, Siva Reddy, Christopher Pal; *Measuring Systematic Generalization in Neural Proof Generation with Transformers*, Neural Information Processing Systems (NeurIPS), 2020
- Koustuv Sinha, Joelle Pineau, Jessica Forde, Rosemary Nan Ke, Hugo Larochelle; *NeurIPS 2019 Reproducibility Challenge*, ReScience-C Journal, Volume 6, Issue 2, 2020
- Koustuv Sinha, Prasanna Parthasarathi, Jasmine Wang, Ryan Lowe, William L. Hamilton, Joelle Pineau; *Learning an Unreferenced Metric for Online Dialog Evaluation*, Association of Computational Linguistics (ACL), 2020
- Emily Goodwin, Koustuv Sinha, Timothy J O'Donnell; *Probing Linguistic Systematicity*, Association of Computational Linguistics (ACL), 2020
- Koustuv Sinha, Shagun Sodhani, Jin Dong, Joelle Pineau and Will Hamilton; *CLUTRR: A Diagnostic Benchmark for Inductive Reasoning in Text*, Empirical Methods of Natural language Processing (EMNLP), 2019, **Oral**
- Joelle Pineau, Koustuv Sinha, Genevieve Fried, Rosemary Nan Ke, and Hugo Larochelle; *ICLR Reproducibility Challenge, 2019*, ReScience-C Journal, Volume 5, Issue 2, 2019
- Koustuv Sinha, Yue Dong, Jackie Chi-kit Cheung and Derek Ruths; *A Hierarchical Neural Attention-based Text Classifier*, Empirical Methods of Natural language Processing (EMNLP), 2018
- Peter Henderson, Koustuv Sinha, Nicolas Angelard-Gontier, Nan Rosemary Ke, Genevieve Fried, Ryan Lowe, Joelle Pineau; *Ethical Challenges in Data-Driven Dialogue Systems*, AAAI/ACM conference on Ethics and Safety, 2017

## Preprints

- Koustuv Sinha, Robin Jia, Dieuwke Hupkes, Joelle Pineau, Adina Williams, Douwe Kiela; *Masked Language Modeling and the Distributional Hypothesis: Order Word Matters Pre-training for Little*, April 2021
- Prasanna Parthasarathi, Koustuv Sinha, Joelle Pineau, Adina Williams; *Sometimes we want Translationese*, April 2021
- Anuroop Sriram, Matthew Muckley, Koustuv Sinha, Farah Shamout, Joelle Pineau, Krzysztof J. Geras, Lea Azour, Yindalon Aphinyanaphongs, Nafissa Yakubova, William Moore; *COVID-19 Deterioration Prediction via Self-Supervised Representation Learning and Multi-Image Prediction*, January 2021

- Koustuv Sinha, Shagun Sodhani, Joelle Pineau, William L. Hamilton; *Evaluating Logical Generalization in Graph Neural Networks*, March 2020
- Nicolas Gontier, Koustuv Sinha, Peter Henderson, Iulian Serban, Michael Noseworthy, Prasanna Parthasarathi, Joelle Pineau; *The RLLChatbot: a solution to the ConvAI Challenge*, November 2018
- Peter Henderson, Koustuv Sinha, Rosemary Nan Ke, Joelle Pineau; *Adversarial Gain*, November 2018

## Invited Talks

- *ML Reproducibility - From Theory to Practice*, MICCAI Hackathon, Peru, October 2020 (held online)
- *ML Reproducibility - From Theory to Practice*, DL4Science Seminar, Lawrence Berkeley National Laboratory, Berkeley, August 2020 (held online)
- *Evaluating Logical Generalization with Graph Neural Networks*, Weights and Biases Salon, May 2020 (held online)
- *Best practices for ensuring Reproducibility in CS Research*, 1st Annual CS-Can Student Symposium, Montreal, 2019
- *On the unreasonable complexity of detecting social interactions in literature*, Digital Humanities (DH) 2017, July'17, McGill University, Montreal

## Activities

- Co-organizer, Machine Learning Reproducibility Challenge (2021*, 2020*, 2019 NeurIPS, 2019 ICLR, 2018 ICLR)
  * *From 2020 onwards, the Machine Learning Reproducibility Challenge incorporated papers from 7 top conferences: NeurIPS, ICML, ICLR, ACL, EMNLP, CVPR, ECCV*
- Reproducibility Co-Chair, Neural Information Processing Systems (NeurIPS), 2019, 2020
- Associate Editor, ReScience (2019-Present)
- Student Volunteer, Neural Information Processing Systems (NeurIPS), Montreal, December 2018
- Student Volunteer, Montreal AI Symposium (MAIS), August 2018
- Student Volunteer, $11^{th}$ International Conference on Web and Social Media (ICWSM), May 2017, Montreal
- President, Computer Science Graduate Society (CSGS), McGill University, 2018-19; VP Social and Finance, 2017-18
- Host, **Nodeschool** Kolkata Chapter, Institute of Engineering & Management, Kolkata, May 2016.

## Awards & Achievements

- **Outstanding Paper Award** at Association for Computational Linguistics (ACL) 2021 for the paper "UnNatural Language Inference"
- **Fonds Nature et Technologies Quebec (FRQNT)** scholarship for Master level study in Computer Science, 2018
- **Facebook ParlAI Grant** for project proposal *Multi-model dialog generation with Off-Policy Q Learning*, Fall 2017
- **Pierre Arbour Foundation Scholarship** for Master level study in Computer Science & Engineering, 2017-18
- **Sridharacharya Prize** for Computer Excellency awarded due to consistent Highest Marks in Computer Science at Ramakrishna Mission Vidyalaya, Narendrapur, 2007

## References

Available on request.

## More Information

Google Scholar Profile
https://scholar.google.ca/citations?user=9P9QcckAAAAJ&hl=en

LinkedIn Profile
https://in.linkedin.com/in/koustuvsinha.

Github Profile
https://github.com/koustuvsinha.