

Md Rabiul Awal

MAIR LAB at Mila, Montreal

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EDUCATION

Mila, University of Montreal

PhD. Computer Science

Montreal, Quebec

Incoming PhD in Fall 2024

University of Saskatchewan

MSc. Computer Science (Overall grade 88%)

Saskatoon, Canada

01/2021 – 12/2022

Advisor: Michael Horsch

External affiliation: [Social AI Studio](#) at SUTD ◊ Advisor: Roy Ka-Wei Lee

Thesis: Tackling Social Value Tasks with Multilingual NLP [pdf](#)

Noakhali Science and Technology University

BSc. Computer Science

Noakhali, Bangladesh

03/2014 – 12/2018

PUBLICATION

- [1] “VisMin: Visual Minimal-Change Understanding.” Rabiul Awal*, Saba Ahmadi*, Le Zhang*, and Aishwarya Agrawal
Preprint, 2024. [project page](#)
- [2] “CulturalVQA: Benchmarking Vision Language Models for Cultural Knowledge.” Shravan Nayak, Kanishk Jain, Karolina Stanczak, Md Rabiul Awal, and Aishwarya Agrawal
Computer Vision in the Wild Workshop, CVPR, 2024.
- [3] “Contrasting Intra-modal and Ranking Cross-modal Hard Negatives to Enhance Visio-linguistic Compositional Understanding.” Le Zhang, **Rabiul Awal**, Aishwarya Agrawal
IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2024. [pdf codes](#)
- [4] “Investigating Prompting Techniques for Zero- and Few-Shot Visual Question Answering.” **Rabiul Awal**, Le Zhang, Aishwarya Agrawal
Prompting in Vision Workshop, CVPR, 2024. (Oral) [pdf codes](#)
- [5] “Evaluating GPT-3 Generated Explanations for Hateful Content Moderation.” Han Wang, Ming Shan Hee, **Rabiul Awal**, Roy Ka-Wei Lee, and Kenny Tsu Wei Choo
International Joint Conference on Artificial Intelligence (IJCAI), 2023. [pdf codes](#)
- [6] “Model-Agnostic Meta-Learning for Multilingual Hate Speech Detection.” **Rabiul Awal**, Roy Ka-Wei Lee, Eshaan Tanwar, Tanmay Garg, Tanmoy Chakraborty
IEEE Transactions on Computational Social Systems (TCSS), 2023, ISSN: 2329-924X. [pdf codes](#)
- [7] “AngryBERT: Joint Learning Target and Emotion for Hate Speech Detection.” **Rabiul Awal**, Rui Cao, Roy Ka-Wei Lee, Sandra Mitrović
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 2021. [pdf codes](#)

RESEARCH & WORK EXPERIENCE

Mila, Quebec AI Institute

Research Intern ◊ Advisor: Aishwarya Agrawal

Montreal, Canada

01/2023 –

- Studied VLMs to effectively learn from multi-image visual difference, hard-negative samples for improving fine-grained understanding/compositionality.
- Released the first VQA benchmark for diverse and multi-cultural understanding (30 countries) to enable further research.
- Contributed to two CVPR (accepted) and two NeurIPS submissions (under review), first author in two.
- **Recent focus: multimodal representation learning.**

MITACS - LST Accelerate Program

Machine Learning Intern

Saskatoon, Canada

03/2022 – 09/2022

- Developed a data-engine pipeline to enhance scientific document summarization models.
- Engineered custom Transformers for optimized long-document processing and implemented domain adaptive training strategies.

Social AI Studio, SUTD

Remote

Student Researcher ◊ Advisor: Roy Ka-Wei Lee

06/2020 – 11/2022

- Created datasets for Southeast Asian languages for tackling hate speech and misinformation.
- Researched transfer learning and meta-learning techniques specifically tailored for low-resource NLP.
- Contributed to five papers, first author in four, successfully collaborating remotely during COVID-19.

Goava Sales Intelligence AB

Dhaka, Bangladesh

Software Engineer

01/2019 – 12/2020

- Worked on 10+ scalable microservices and REST APIs using Flask, Lambda, API Gateway.
- Contributed to the Discover and Find Companies APIs, which generate leads from 3M+ profiles.
- Worked on refactoring data structures for indexing and searching big data using Elastic Search.
- Contributed to a distributed crawler (Nutch, AWS EMR, Hadoop), thousands of websites crawl/day.

IN-PROGRESS RESEARCH

[1] Language-Mediated, Real-World Object-Centric Representation Learning

- Complement Transformers with object representations for improved compositionality in VLMs. (IN-PROGRESS)

AWARDS

Selected for CIFAR DLRL Summer School at Toronto	2024
Selected for Upper Bound Talent Bursary at Alberta	2024
Selected for Alberta University AI Week Talent Bursary	2022
Graduate Teaching Fellowship @UofS, Canada	2021
1st place at NSTU Intra University Programming Contest, Dhaka, Bangladesh	2016
3rd place at CoU Regional Programming Contest (CoURPC), Comilla, Bangladesh	2015

SERVICE & LEADERSHIP

Reviewers: CVPR24, ACL23, SIGIR22, AACL22, ICDM21

Organizer - Language Grounding Reading Group at Mila 2023

MSc Representative - Computer Science Graduate Council @UofS 2021–2022

Organizer – [NLPDhaka](#), a grass-root community for fostering ML in Bangladesh 01/2021 – 12/2022

President – Computing Club @NSTU, Noakhali, Bangladesh 01/2017 – 06/2018

SKILLS & INTERESTS

Research: Deep Learning, Representation Learning, Spatial Intelligence

Skills: Python (PyTorch, Tensorflow), Java, C/C++, NoSQL (Elasticsearch), AWS (SageMaker, EC2, Lambda)