

# Md Rabiul Awal

MAIR LAB at Mila, Montreal

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## EDUCATION

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### 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

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- [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

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### Mila, Quebec AI Institute

Research Intern ◊ Advisor: Aishwarya Agrawal

Montreal, Canada

01/2023 –

- Studied Vision-language models (VLMs) to assess and improve minimal visual difference understanding, hard-negative samples for improving fine-grained understanding/compositionality.
- Developing the first VQA benchmark to evaluate multi-cultural understanding (10 countries) in VLMs.
- Contributed to two CVPR (one main, one workshop accepted) and one NeurIPS submission (under review); first author in two.
- **Recent focus: multimodal representation learning, fine-grained understanding.**

### MITACS - LST Accelerate Program

Machine Learning Intern

Saskatoon, Canada

03/2022 – 09/2022

- Developed and optimized a data-engine pipeline for scientific document summarization, incorporating custom Transformers and domain adaptive training strategies.

## Social AI Studio, SUTD

*Remote*

Student Researcher ◊ Advisor: Roy Ka-Wei Lee

06/2020 – 11/2022

- Developed low-resource NLP datasets and deep learning methods for tackling hate speech and misinformation, contributing to five papers as a lead author on four, under remote conditions due to 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)