Rabiul Awal

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Education

Mila - Quebec AI Institute, University of Montreal   *Montreal, Quebec*
PhD. Computer Science, Advisor: Aishwarya Agrawal   *09/2024 –*
Courses: Reinforcement Learning and Optimal Control

University of Saskatchewan   *Saskatoon, Canada*
MSc. Computer Science (Overall grade 88%)   *01/2021 – 12/2022*
Advisor: Michael Horsch, Roy Ka-Wei Lee
Thesis: Tackling Social Value Tasks with Multilingual NLP [pdf]

Noakhali Science and Technology University   *Noakhali, Bangladesh*
BSc. Computer Science   *03/2014 – 12/2018*

Publication

Google Scholar: https://scholar.google.com/citations?user=oOcLfUMAAAAJ&hl=en
*Denotes equal contribution

1. "The Promise of RL for Autoregressive Image Editing." Saba Ahmadi*, **Rabiul Awal***, Ankur Sikarwar*, Amirhossein Kazemnejad*, Ge Ya Luo, Juan A. Rodriguez, Sai Rajeswar, Siva Reddy, Christopher Pal, Benno Krojer, Aishwarya Agrawal
   Preprint

2. "Rendering-Aware Reinforcement Learning for Vector Graphics Generation." Juan A. Rodriguez, Haotian Zhang, Abhay Puri, Aarash Feizi, Rishav Pramanik, Pascal Wichmann, Arnab Mondal, Mohammad Reza Samsami, **Rabiul Awal** + 7 others
   Preprint [pdf]

3. "WebMMU: A Benchmark for Multimodal Multilingual Website Understanding and Code Generation." **Rabiul Awal**, Mahsa Massoud, Aarash Feizi, Zichao Li + 9 others
   Spotlight presentation at the Multimodal Algorithmic Reasoning Workshop at CVPR'25

4. "CTRL-O: Language-Controllable Object-Centric Visual Representation Learning." Anikter Didolkar*, Andrii Zadaianchuk*, **Rabiul Awal***, Maximilian Seitzer, Efstratios Gavves, Aishwarya Agrawal. *coin-flipped order
   IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2025. [pdf] [website]
   Spotlight presentation at the Multimodal Algorithmic Reasoning Workshop at CVPR'25

5. "VisMin: Visual Minimal-Change Understanding." **Rabiul Awal***, Saba Ahmadi*, Le Zhang*, and Aishwarya Agrawal.
   The Conference on Neural Information Processing Systems (NeurIPS), 2024. [pdf] [website]

6. "Benchmarking Vision Language Models for Cultural Understanding." Shravan Nayak, Kanishk Jain, **Rabiul Awal**, Siva Reddy, Sjoerd van Steenkiste, Lisa Anne Hendricks, Karolina Stanczak, Aishwarya Agrawal. **(Oral Presentation)**
   The Conference on Empirical Methods in Natural Language Processing (EMNLP), 2024. [pdf] [website]

7. "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] [code]
   Spotlight presentation at the Open-Domain Reasoning Multi-Modal Workshop at CVPR'23

Experience

ServiceNow Research, Multimodal Team *Montreal, Canada*
Visiting Researcher, Advisor: Sai Rajeswar 07/2024 –

Mila - Quebec AI Institute, University of Montreal *Montreal, Canada*
Research Intern, Advisor: Aishwarya Agrawal 01/2023 – 08/2024

Mitacs, LST Accelerate Program *Saskatoon, Canada*
Machine Learning Intern 03/2022 – 09/2022

Social AI Studio, Singapore University of Technology and Design *Remote*
Student Researcher, Advisor: Roy Ka-Wei Lee 06/2020 – 11/2022

Goava Sales Intelligence AB *Dhaka, Bangladesh*
Software Engineer 01/2019 – 12/2020

In-progress research

- Reasoning for Visual Representation Learning

- Few-step Flow for World Modeling

- Pluralistic Value Alignment in Multimodal AI (diverse cultural values and cultural norms preference datasets; algorithms for value-alignment tuning)

Awards

Selected for CIFAR DLRL Summer School at Toronto 2024

Selected for Upper Bound Talent Bursary at Alberta ($1500) 2024

Selected for Alberta University AI Week Talent Bursary ($1500) 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

Workshop Organizer at CVPR25 *Vision Language Models For All: Building Geo-Diverse and Culturally Aware Vision-Language Models*

Reviewers: CVPR25, ECCV24, CVPR24, ACL23, SIGIR22, AACL22, ICDM21

Organizer: Language Grounding Reading Group at Mila 2023 –

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

Organizer: [NLPDhaka Reading Group](#) 01/2021 – 12/2022

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

Skills & Interests

Research: Visual Representation Learning, Generative Models, AI in the Physical World
Skills: Python (PyTorch, Tensorflow), Java, C/C++, NoSQL (Elasticsearch), AWS (SageMaker, EC2, Lambda)