SABA Ahmadi

✉ saba.ahmadi@mila.quebec | 📞 514-443-8196 | 🔗 saba-ahmadi | 🐙 saba96 | 📍 Montreal, Canada

AI graduate with academic expertise in large-scale deep learning research infrastructure, specializing in large vision and language models.

EDUCATION

Computer Science (Artificial Intelligence) — *Master of Science* Jan 2021 - Dec 2023
Université de Montréal, Montreal, Canada

Computer Engineering (Hardware) — *Bachelor of Science* Sep 2014 - Jan 2019
Isfahan University of Technology, Isfahan, Iran

EXPERIENCE

Graduate Research Assistant — *Mila* Nov 2021 - Present
- Working on multimodal AI at the intersection of computer vision and natural language processing, advised by Professor Aishwarya Agrawal.

Teaching Assistant — *Université de Montréal* Sep 2023 - Dec 2023
- Teaching Assistant for IFT6135 – Representation learning
- Responsibilities included holding office hours, PyTorch lecture, setting and grading homework and exams.

Software Engineering Intern — *Code Chrysalis, Tokyo, Japan* June 2017 - Sep 2017
- Contributed to developing several web applications.

Teaching Assistant — *Isfahan University of Technology* Jan 2016 - Jul 2017
- Courses: Fundamental of Computer Programming, Advanced Computer Programming and Discrete Mathematics.

SKILLS

- Programming: Python, C++, C, JavaScript, Java, Verilog
- Libraries: PyTorch, NumPy, Pandas, SciKit-Learn
- Databases: Postgres, MySQL, Redis, MongoDB

LANGUAGES

- English: Proficient
- French: A2
- Persian: Native

COURSES

Graduate courses- Université de Montréal:
- Fundamentals of Machine Learning (A+)
- Representation Learning (A+)
- Machine Learning and Game Theory (A-)
- Probabilistic Graphical Models (A+)

PUBLICATIONS

1. VisMin: Visual Minimal-Change Understanding. R. Awal*, S. Ahmadi*, L. Zhang*, A. Agrawal. Neural Information Processing Systems (NeurIPS), 2024. * **equal contribution**
2. An Examination of the Robustness of Reference-Free Image Captioning Evaluation Metrics. S. Ahmadi, A. Agrawal. In the Findings of the Association for Computational Linguistics: European Chapter of the Association for Computational Linguistics (EACL), 2024.
Also, presented at Workshop on Open-Domain Reasoning Under Multi-Modal Settings at IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2023.
3. MAPL: Parameter-Efficient Adaptation of Unimodal Pre-Trained Models for Vision-Language Few-Shot Prompting. O. Manas, P. Rodrguez*, S. Ahmadi*, A. Nematzadeh, Y. Goyal, A. Agrawal.
European Chapter of the Association for Computational Linguistics (EACL), 2023. * **equal contribution**

PROJECTS

VisMin: Visual Minimal-Change Understanding — *Mila* - 2024
- Generated hard-negative image pairs with minimal visual changes using diffusion models to benchmark and improve fine-grained understanding in vision-language models.

An Examination of the Robustness of Reference-Free Image Captioning Evaluation Metrics. — *Mila* - 2023
- Assessed robustness of reference-free image captioning evaluation metrics like CLIPScore, UMIC, and PAC-S in identifying fine-grained errors and nuances in visual and linguistic aspects, aiming to guide improvements in reference-free image captioning evaluation.

MAPL: Parameter-Efficient Adaptation of Unimodal Pre-Trained Models for Vision-Language Few-Shot Prompting. — *Mila* - 2022
- Proposed MAPL, a simple and parameter-efficient method that reuses frozen pre-trained unimodal models and leverages their strong generalization capabilities in multimodal vision-language settings. MAPL learns a lightweight mapping between the representation spaces of unimodal models using aligned image-text data, and can generalize to unseen VL tasks from just a few in-context examples.

A drone routing system — *Code Chrysalis, Tokyo, Japan* - 2017
- Implemented a web application that reimagines the future of commercial delivery networks within a team. Built using JavaScript, Postgres, ReactJS and ExpressJS. We used Dijkstra's algorithm to route drones through a network of hypothetical charging stations to deliver packages with drones.

HONOURS AND CERTIFICATES

- Trustworthy and Responsible AI Learning Certificate, Mila. -2022
- **Excellence scholarship** from the DIRO (Département d'informatique et de recherche opérationnelle- Université de Montréal). - 2023

TALKS

- An Examination of the Robustness of Reference-Free Image Captioning Evaluation Metrics at Mila Partner's Symposium. - 2023