

ARISTIDES MILIOS

Montreal, CA | aristides.milios@gmail.com | atmilios.com | Greek/Can citizen

SUMMARY

- Expertise in deep learning and neural networks, LLMs, dense retriever models (GTR, SentenceTransformers), reinforcement learning with LLMs (PPO, GRPO, TRL library)
- Expertise in entrepreneurship and innovation (through startup, Shad Valley, Stanford's University Innovation Fellows Program, and presidential role in Dalhousie Entrepreneurship Society)
- Expertise in full-stack web design and web system architecture (Python backends, React, PostgreSQL management)

EXPERIENCE

Visiting Researcher, ServiceNOW Research (via MITACS) March 2025 – March 2026
Montreal, Canada

- Working as a visiting researcher in the Conversational AI group, via a MITACS internship of 1 year. Working on teaching LLMs the limits of their abilities in coding contexts via RL.

Visiting Researcher, ServiceNOW Research (via Magnit) January 2024 – July 2024
Montreal, Canada

- Working as a visiting researcher in the Conversational AI group headed by Dzmitry Bahdanau. Worked on teaching LLMs the limits of their knowledge via RL.

Contractor, NACO Canada January 2021 – August 2023
Toronto, Canada

- Automated the generation of figures and tables for the NACO yearly investment report using Colab, Pandas, PyExcel, and Matplotlib/Plotly

Teaching Assistant, McGill University September 2022 – December 2022
Montreal, Canada

- Worked as a Teaching Assistant for Dr. Siva Reddy for course COMP 599 "Natural Language Understanding with Deep Learning / Computational Semantics"
 - Designed a unique assignment on RNN/LSTM/BiLSTM networks where students crafted cells utilizing fundamental PyTorch modules

Contractor, Communications Security Establishment January 2021 – September 2021
Halifax, Canada

- Co-wrote a report on the state of language models for the CSE

Research Assistant, Dalhousie University January 2021 – September 2021

Halifax, Canada

- Worked as Research Assistant for Dr. Luis Torgo and Dr. Stan Matwin
 - Research assistantship with Dr. Luis Torgo, researching healthcare-related time series clustering and classification with gradient-boosted trees
 - Research assistantship with Dr. Stan Matwin, resulting in a survey paper on the use of neural LMs to analyze social media data and potential dangers related to bias and misinformation

Teaching Assistant, Dalhousie University

September 2020 – May 2021

Halifax, Canada

- Worked as Teaching Assistant for the Faculty of Computer Science in Fall 2020 and Winter 2021 academic terms
 - CSCI 3162 Digital Media with Dr. Dirk Arnold (Winter 2021)
 - CSCI 3141 Foundations of Data Science using R with Dr. Luis Torgo
 - CSCI 2170 Server-side Scripting with Dr. Bonnie MacKay
 - CSCI 2141 Intro to Database Systems with Dr. Khurram Aziz

Research Intern, Know-Center GmbH

September 2019 – January 2020

Graz, Austria

- Third co-op work term of degree at Dalhousie
- Integrated an Attention-based visualization mechanism to an HTML-based labelling UI with an LSTM backend using Active Learning principles to increase human labelling performance
- Worked with Keras and Tensorflow to implement LSTM backend model for the UI
- Helped design a user study to evaluate the effectiveness of the changes to the tool

Research Intern, MarineTraffic

May – August 2018, January – May 2019

Athens, Greece

- Trained CNNs to detect the presence of vessels in radar (SAR) and optical maritime satellite imagery using AIS (ship navigation) data streams as ground truth for supervised model training
- Partially funded by a MITACS Globalink Grant
- Resulted in a full paper at FUSION 2019 Conference and a presentation at the Maritime Situational Awareness Workshop in La Spezia, Italy. See Academic Publications for further details.

Co-founder and CTO, MicroCent Technologies Inc.

January 2014 – September 2018

Halifax, Canada

- Founded a startup in high school with a classmate, using Wi-Fi beacons to track customers in brick-and-mortar stores via their phones and provide Google-Analytics like statistics to store owners
- Did two accelerators, Launch36 (Sep-Nov 2014); Propel ICT accelerator (June-Sep 2015)

- Many responsibilities as CTO, including management of technical staff and overall product direction, as well as hands-on development of the web platform

Freelance Web Developer

September 2016 – Present

- Further experience with Flask, React, Laravel, and Django

EDUCATION

Université de Montréal, Ph.D. in Computer Science

September 2021 – Present

Montreal, Canada

- Working with Dr. Chris Pal on LLM self-knowledge via RL
- GPA of 4.3/4.3

McGill University, M.Sc. in Computer Science

September 2021 – Present

Montreal, Canada

- Working with Dr. Siva Reddy and Dr. Dzmitry Bahdanau to research retrieval augmentation for LMs for better In-Context Learning
- Two workshop papers so far, one on retrieval-augmented classification with large label sets, and one on probing monolingual non-English BERT models for cultural and social bias
- GPA of 4.0/4.0

Dalhousie University, Bachelor of Computer Science

September 2016 – August 2020

Halifax, Canada

- Accepted on a full scholarship
- GPA 4.13/4.3, graduated in top 10% of class with First Class Honours
- Wrote Honours Thesis on more compact BERT sentence embeddings for downstream tasks
- Awarded Entrepreneurial Skills Certificate, given by the Centre for Entrepreneurship Education and Development, through the Entrepreneurial Skills Program (ESP) at Dalhousie

LEADERSHIP

Lab representative, Mila

December 2024 – December 2025

Montreal, Canada

- Elected a lab representative at Mila. Created a new site for the Lab Reps with important information for students – got the site linked from the official Mila website. Pushed for formalization of student representation at Mila via an official OBNL organization.

VP Communications, McGill CS Graduate Society

November 2022 – September 2023

Montreal, Canada

- Coordinated effectively with other members of Executive team to market the society's events on the society's communication channels (mailing list, Discord server, updating website, Google Calendar, YouTube channel)
- Added new channel: Society Instagram account, and grew it to over 130 followers

VP Finance, McGill CS Graduate Society

December 2021 – November 2022

Montreal, Canada

- Presided over the Society's finances and budget
- Redesigned the Society's website (<https://csgs.cs.mcgill.ca>)

Co-President, Dalhousie Entrepreneurship Society

January 2018 – August 2020

Halifax, Canada

- Co-president of DES, inherited from previous Dalhousie University Innovation Fellows, ran series of workshops to introduce students to fundamental entrepreneurship and design thinking concepts

University Innovation Fellow, Dalhousie

October 2017

Halifax, Canada and Sunnyvale, California

- Passed through rigorous 2-month online training, then 4-day conference in Silicon Valley (Stanford Campus and Google headquarters) to meet all other Fellows from all over the world

Shad Valley Fellow

July 2014

Hamilton, Canada

- Took part in 1-month intensive program at McMaster University in Hamilton, covering entrepreneurship, innovation, and STEM topics in general

VOLUNTEERING

Co-founder and Program Coordinator, Hoist Halifax

January 2015 – December 2017

Halifax, Canada

- Co-founded Hoist Halifax; program to get teens interested in tech and entrepreneurship

LANGUAGES AND CERTIFICATIONS

- Native English and Greek and French B2 level

AWARDS RECEIVED

- IVADO M.Sc. Excellence Scholarship (\$40K CAD value)
- Mitacs Globalink Grant (\$6K CAD value) for exchange to Greece
- McGill Lorne Trottier Graduate Fellowship (\$5K CAD value)
- McGill NSERC top-up funding (\$5K CAD value)
- NSERC CGS-M funding for first year of M.Sc. (\$17.5K CAD value)
- Full scholarship for undergraduate study at Dalhousie (\$42K CAD value)

ACADEMIC PUBLICATIONS

- A. Piché, A. Milios, D. Bahdanau, C. Pal, "LLMs can learn self-restraint through iterative self reflection". arXiv link: <https://arxiv.org/abs/2405.13022>. Accepted to Transactions on Machine Learning Research (TMLR) in Sept. 2025.
- A. Piché, A. Milios, D. Bahdanau, C. Pal, "Self-evaluation and self-prompting to improve the reliability of LLMs". OpenReview link: <https://openreview.net/forum?id=lwB45cjgC8> (PDF at https://atmilios.com/assets/101_self_evaluation_and_self_prompt.pdf) Accepted to Secure and Trustworthy Large Language Models at ICLR 2024.
- A. Milios, S. Reddy, D. Bahdanau, "In-Context Learning for Text Classification with Many Labels", arXiv preprint: <https://arxiv.org/abs/2309.10954>. Accepted to GenBench workshop at EMNLP 2023.
- A. Milios, P. BehnamGhader, "An analysis of social biases present in BERT variants across multiple languages", arXiv preprint: <https://arxiv.org/abs/2211.14402>. Accepted to 2022 Trustworthy and Socially Responsible Machine Learning (TSRML) Workshop at NeurIPS 2022.
- S. Matwin, A. Milios, P. Pralat, A. Soares, and F. Theberge, "Survey of Generative Methods for Social Media Analysis", arXiv preprint: <https://arxiv.org/abs/2112.07041>
- A. Milios, D. Zisis, K. Chatzikokolakis, and S. Matwin, "Sail ho! A deep learning approach for ship detection which utilises complimentary sensing capabilities, " 2018 Canadian Tracking and Fusion group (CTFG) Workshop, Ottawa, ON, Canada, 15-16 October 2018.
- A. Milios, K. Bereta, K. Chatzikokolakis, D. Zisis and S. Matwin, "Automatic Fusion of Satellite Imagery and AIS data for Vessel Detection," 2019 22th International Conference on Information Fusion (FUSION), Ottawa, ON, Canada, 2-5 July 2019. Link: <https://ieeexplore.ieee.org/abstract/document/9011339>
- K. Bereta, A. Milios, K. Chatzikokolakis, and D. Zisis, "Monitoring Marine Protected Areas using Data Fusion and AI Techniques," NATO CMRE Maritime Situational Awareness Workshop, La Spezia, Italy, 2019. Link: <https://www.cmre.nato.int/msaw-2019-home/msaw2019-papers/1394-msaw2019-bereta-monitoringmarineprotectedareasusingdatafusionandaitechniques/file>