Khaoula Chehbouni

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Profile

I am a second year PhD Student in Computer Science at McGill University and Mila (Quebec AI Institute), supervised by Professor Golnoosh Farnadi and professor Jackie Chi Kit Cheung. I was awarded the prestigious FRQNT Doctoral Training Scholarship to research fairness and safety in large language models. Previously, I completed my Masters in Business Intelligence at HEC Montreal, where I received the Best Master Thesis award. My research interest includes responsible AI, fairness and safety issues in large language models, evaluation of natural language generation, privacy and federated learning, as well as low-resource languages.

Education

McGill University/Mila — Montreal, QC
PhD in Computer Science; GPA: 4/4 — *Aug 2023 - Aug 2027*
Under the supervision of professor Golnoosh Farnadi

HEC Montreal/Mila — Montreal, QC
Master of Science in Business Intelligence; GPA: 4.07/4.3 — *Aug 2020 - Aug 2022*
Under the supervision of professors Golnoosh Farnadi and Gilles Caporossi

HEC Montreal — Montreal, QC
DESS in Information Technologies; GPA: 3.99/4.3 — *Aug 2019 - Aug 2020*

University of Montreal — Montreal, QC
Certificate in Applied Computer Science — *Jan 2017 - Dec 2017*

HEC Montreal — Montreal, QC
Bachelor of Administration — *Aug 2011 - Dec 2015*

Skills Summary

- **Programming Languages** Python, R, SQL, SAS
- **Languages** French, English, Arabic, Spanish

Experience

Statistics Canada — Montreal, QC
Senior Data Scientist — *Mai 2024 - September 2024*
- **Project:** Work in the *Research, Method and Information Extraction* section in fairness and privacy issues in large language models.

Mila - Quebec AI Institute — Montreal, QC
Research Intern — *Jan 2023 - June 2023*
- **Project:** Worked on bias mitigation and privacy in sparse language models under professor Golnoosh Farnadi.

Statistics Canada — Montreal, QC
Data Scientist — *Sep 2022 - Jan 2023*
- **Position:** Work in the *Methods, Quality and Research* section in responsible AI
- **Project:** Developed a course on bias and fairness in machine learning

IBM x Ivado — Montreal, QC
Research Assistant — *Oct 2021 - Apr 2022*
- **Project:** Towards Discovering and Understanding how to improve the representation of women in STEM: A case study from IBM Inventorship and Patenting
- **Description:** Literature review and predictive modelling to understand inclusion issues in IBM's patents activities

La Presse x Ivado — Montreal, QC
Data Journalist Intern — *May 2021 - Sep 2021*
- **Text Analysis:** Scrapping, topic modelling, sentiment analysis, clustering, predictive modelling
- **Writing:** Published 9 articles on La Presse's official website, 3 of them were front-page articles

Canadians for Justice and Peace in the Middle East — Montreal, QC
IT Manager — *Jan 2016 - Dec 2021*
- Managed IT bugs, transfer of data, and design improvement projects.
- Implemented the new website on the NationBuilder platform
- Created practical tools and tutorials for management and accounting software

Research Projects

- **From Representational Harms to Quality-of-Service Harms: A Case Study on Llama 2 Safeguards Chehbouni, K.**, et al., Accepted to Findings of the Association for Computational Linguistics: ACL 2024
- **Early Detection of Sexual Predators with Federated Learning. Chehbouni, K.**, Caporossi, G., Rabbany, R., De Cock, M., Farnadi, G., In: Workshop on Federated Learning: Recent Advances and New Challenges (in Conjunction with NeurIPS 2022).

- **AI and Cities: Risks, Applications and Governance.** Koseki, S. et al. **et al.**, In: 4th Urban Economy Forum Conference 2022
- **Leveraging AI for Natural Disaster Management: Takeaways From The Moroccan Earthquake.** Ezzine, L. **et al.**, In: 6th Workshop on Artifical Intelligence for Humanitarian Assistance and Disaster Response NeurIPS 2023.
- **Unmasking Predators: Safeguarding Vulnerable Moroccan Communities Post-Earthquake** Taïk*, A., **Chehbouni*, K.**, Jain*, K., et al., In: North Africans in Machine Learning Workshop at NeurIPS 2023.
- **Enhancing Privacy in Early Detection of Online Grooming Through Federated Learning and Differential Privacy Chehbouni, K.** et al., Forthcoming
- **Systematic Hazard Taxonomy Along the AI Lifecycle. Chehbouni, K.**, et al., Forthcoming
- **Auditing the Helpful and Harmless Dataset. Chehbouni, K.***, Jonathan Jonathan Colaço Carr*, et al., Forthcoming.

Talks and Communications

- I was an invited speaker for Mila AI Policy Compas - August 2024: "Biais et Équité en intelligence artificielle"

- I was an invited speaker at Congrès de la Société de philosophie du Québec - June 2024: "Mitigation des risques liés aux Grands Modèles de Langage"

- I was an invited speaker at the Machine Learning Technical Series at Statistics Canada - July 2024: "From Representational Harms to Quality-of-Service Harms: A Case Study on Llama 2 Safety Safeguards"

- I participated in a live debate on the use of AI for immigration in the Responsible AI Track at the Canadian AI Conference in Guelph in May 2024.

- I was an invited speaker at Google's Women Techmakers event - April 2024: "Towards Inclusive AI: Understanding Bias in Machine Learning Models"

- I was an expert at a roundtable about the risks of general purpose AI systems organized by Mila AI for Humanity for ISED (Innovation, Science and Economic Development Canada) in February 2024.

- Research IceBreaker event at Mila - October 2023: "Unmasking Predators: Safeguarding Vulnerable Moroccan Communities Post-Earthquake"

- I was featured in the Fall 2023 Edition of HEC Mag: "Khaoula Chehbouni: Démasquer les prédateurs sexuels".

Awards and Scholarship

- Winner of the Three Minute Thesis Competition at the Responsible AI Track of the Canadian AI Conference 2024
    I was the winner of the 3MT competition at the Canadian AI Conference — Responsible AI Track. The award was a cash prize of $600. I was also awarded a travel grant of $1160 to attend the conference by Mila.

- FRQNT doctoral training scholarships
    My research proposal "Equity and Intersectionality: A New Perspective for Generative Models" was awarded one of the prestigious FRQNT doctoral training scholarships. It's an annual scholarship of $25000 per year for 4 years (for a total of $100000).

- Mila Excellence Scholarship - EDI in Research
    I was awarded one of Mila's Excellence scholarship for the category EDI in Research, PhD level. It's an annual scholarship of $8000 per year for 3 years (for a total of $24000).

- Winner of the Morocco Solidarity Hackathon 2023
    Our project "Unmasking Predators: Safeguarding Vulnerable Moroccan Communities Post-Earthquake" won the Morocco Solidarity Hackathon. We were awarded virtual passes to attend NeurIPS as well as $5,000 AWS credit.

- HEC Montreal's 2022 Best Thesis Award
    My thesis "Mitigating Online Grooming with Federated Learning" won the 2022 Best Thesis Award at HEC Montreal. The award consisted of a scholarship of $2000.

- Women in Machine Learning Travel Grant

    I was awarded 650$US to present my Masters work at the Women in Machine Learning Workshop at NeurIPS 2022.

- IVADO Excellency scholarship "Data Storytelling"

    I was awarded one of IVADO's internship scholarship to conduct an internship at La Presse in data storytelling. The award consisted of a scholarship of $5000.

COMMUNITY SERVICE

- **Technovation Montreal**   Montreal, QC

    Mentor   *Present*

    ○ I mentor a group of high-school girls in the development of an application to help teenagers with their career choices as part of the International Technovation Challenge.

- **Mila - Quebec AI Institute**   Montreal, QC

    PhD Student   *Present*

    ○ I organize the Fairness, Accountability, Transparency, and Ethics reading group at Mila.

    ○ I reviewed papers for the SoLaR Workshop and the AFT Workshop at NeurIPS 2023, as well as the Responsible Generative AI workshop at CVPR 2024 and the ICML 2024 Workshop on Trustworthy Multi-modal Foundation Models and AI Agents.

    ○ I was a student volunteer at NeurIPS 2023 in New Orleans.

- **Canada's New Democrats (NDP) Association**   Montreal, QC

    Financial Agent   *2019 - 2020*

    ○ Managed the financial operations of candidate Miranda's Gallo campaign in the district of Saint-Laurent.

    ○ Reported financial results to Elections Canada.