

Patrik Kenfack

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Research Profile

Last-year PhD Candidate in Trustworthy Machine Learning at Mila/ÉTS, working in fairness-aware machine learning under limited demographic information, with applications to vision and language models, and tabular foundation models

Research Interests: Trustworthy AI, Fairness in Machine Learning, Tabular Foundation Models, In-Context Learning, OOD Generalization, Privacy-Preserving Machine Learning, and Explainable Machine Learning.

Education

Ph.D. in Computer Science <i>ÉTS Montreal, University of Québec</i> <i>Advisors: Ulrich Aïvodji, Samira Ebrahimi Kahou</i>	Jan 2023 – Present <i>Montréal, Canada</i> <i>GPA: 4.33/4.33</i>
M.Sc. in Computer Science <i>University of Dschang</i> <i>Top 1% of 25 students.</i>	Sept 2016 – Jul 2018 <i>Dschang, Cameroon</i> <i>Grade: A</i>
B.Sc. in Mathematics and Computer Science <i>University of Dschang</i>	Sept 2013 – Jul 2016 <i>Dschang, Cameroon</i> <i>Grade: B</i>

Publications

Journal

- Towards Fair In-Context Learning with Tabular Foundation Models**
Transactions of Machine Learning Research (TMLR), January 2026
Patrik Kenfack, Samira Ebrahimi Kahou, Ulrich Aïvodji
(Earlier version accepted at ICML Workshop on Foundation Models for Structured Data, 2025)
- Survey on AI Ethics: A Socio-technical Perspective**
Computational Intelligence, November 2025
Mbiazi Dave, Meghana Bhange, Maryam Babaei, Ivaxi Sheth, **Patrik Kenfack**, and Samira Ebrahimi Kahou
- Adaptive Group Robust Ensemble Knowledge Distillation**
Transactions of Machine Learning Research (TMLR), November 2025
Patrik Kenfack, Ulrich Aïvodji, Samira Ebrahimi Kahou
(Earlier version accepted NeurIPS Workshop on Algorithmic Fairness through the Lens of Metrics and Evaluation, 2024)
- A Survey on Fairness Without Demographics**
Transactions of Machine Learning Research (TMLR), July 2024
Patrik Kenfack, Samira Ebrahimi Kahou, Ulrich Aïvodji
- Fairness Under Demographic Scarce Regime**
Transactions of Machine Learning Research (TMLR), September 2024
Patrik Kenfack, Samira Ebrahimi Kahou, Ulrich Aïvodji

Conference

- Learning Fair Representations through Uniformly Distributed Sensitive Attributes**
First IEEE Conference on Secure and Trustworthy Machine Learning (SaTML), 2023
Patrik Kenfack, Adín Ramírez Rivera, Adil Khan, Manuel Mazarra

2. **RepFair-GAN: Mitigating Representation Bias in GANs Using Gradient Clipping**
Tiny Papers @ ICLR 2023
 Kamil Sabbagh, **Patrik Kenfack**, Adín Ramírez Rivera, Adil Khan
3. **Impact of Model Ensemble On the Fairness of Classifiers in Machine Learning**
IEEE International Conference on Applied Artificial Intelligence (ICAPAI 2021), May 2021, Helden, Norway
Patrik Kenfack, Adil Mehmood Khan; S.M. Ahsan Kazmi, Rasheed Hussain, Alma Oracevic, Asad Masood Khattak
4. **On the Fairness of Generative Adversarial Networks (GANs)**
International Conference "Nonlinearity, Information and Robotics" (NIR), 2021
Patrik Kenfack, Daniil Arapov, D., Rasheed Hussain, SM Ahsan Kazmi, Adil Khan

Workshop

1. **Training Fair Tabular Foundation Models.**
2nd ICML Workshop on Foundation Models for Structured Data, 2026. Spotlight Oral
Kenfack, Patrik, Jesse C. Cresswell, Anthony L. Caterini, Samira Ebrahimi Kahou, and Ulrich Aïvodji.
2. **GradTune: Last-layer Fine-tuning for Group Robustness Without Group Annotation.**
ICLR Workshop on Spurious Correlation and Shortcut Learning: Foundations and Solutions, 2025
Patrik Kenfack, Ulrich Aïvodji, Samira Ebrahimi Kahou
3. **DP-SGD vs PATE: Which Has Less Disparate Impact on Model Accuracy?**
ICML 2021 Workshop on Machine Learning for Data: Automated Creation, Privacy, Bias, 2021
 Archit Uniyal, Rakshit Naidu, Sasikanth Kotti, Sahib Singh, **Patrik Kenfack**, Fatemehsadat Mireshghallah, Andrew Trask

Professional Experience

Layer6 AI at TD Bank **Dec 2025 – May 2026**
Research Intern *Remote, Canada*
Full time

- Designed fairness-aware training methods for transformer-based Tabular Foundation Models, enabling fair in-context learning without task-specific model updates.
- Improved fairness by 32–75% at an accuracy cost of only 2–11%, with a tunable parameter λ giving direct control over the fairness-accuracy trade-off.

Mila - Quebec AI Institute **Jan 2023 – Present**
Student Researcher *Montréal, Canada*
Advisors: Ulrich Aïvodji, Samira Ebrahimi Kahou

- Researching fairness-aware machine learning methods under limited or missing demographic information, with applications to vision and language tasks, foundation models, and robust decision-making.

Abundant Intelligences **Nov 2024 – Nov 2025**
AI Consultant *Montréal, Canada*
Part-time

- Designed and deployed a Retrieval-Augmented Generation (RAG) pipeline integrating Zotero documents and meeting notes, enabling contextualized knowledge access for collaborators.
- Leveraged LlamaIndex to augment open-source Large Language Models (LLMs) with internal knowledge. Improved retrieval relevance through ranking and query optimization techniques.
- Integrated Open WebUI with Ollama-hosted models, empowering non-technical collaborators to query and interact with AI models using their organization's private documents.

OpenMinded **Apr 2021 – Apr 2022**
Research Scientist *Remote*
Part-time

- Investigated fairness properties of PATE and DP-SGD, two widely used privacy-preserving learning algorithms, identifying key disparities in subgroup performance.
- Designed experiments and performed statistical analysis, leading to actionable insights on the trade-offs between fairness and privacy.
- Co-authored a peer-reviewed paper presented at multiple workshops at ICML 2021 and PPML, contributing to the ongoing discourse on responsible AI.

Research Center for Artificial Intelligence

Sept 2020 – Dec 2022

Research Assistant

Innopolis, Russia

Advisor: Adil Khan

- Conducted empirical studies demonstrating that ensemble learning can reduce bias in classification tasks by up to 15%.
- Developed mitigation strategies to reduce fairness risks in Generative Adversarial Networks (GANs), improving parity in outputs across subgroups.
- Implemented image registration techniques to preprocess and stabilize capillaroscopy videos for automatic blood cell counting, improving downstream model accuracy and temporal consistency by 16%.

RastCorp

Jan 2019 – Oct 2020

Data Scientist

Hybrid, Russia

- Built a collaborative filtering recommendation system that improved user engagement metrics by 30%.
- Led an 8-person team in developing a scalable social platform with real-time features such as messaging and personalized news feeds.
- Architected AWS-based backend infrastructure, reducing latency by 25% and supporting 10,000+ concurrent users.

Uni2grow Cameroon

Oct 2017 – Oct 2018

Software Developer

Dschang, Cameroon

- Built Know Your Customer (KYC) solutions on the AppWay platform for European banks, streamlining document generation and reducing onboarding time by 40%.
- Introduced Agile development practices and led onboarding of new developers, boosting team productivity and delivery consistency by 20%.

Academic Activities

- Served as reviewer for: ICML 2025, ICLR 2025; NeurIPS 2024-2026; ICCV 2023; FAccT 2023-2026; AISTATS 2021-2025; ACL Demo track 2026; ACML 2023; CVPR 2024-2026; PKDD 2022; IJCNN 2022; TMLR; Computational Intelligence; Information and Software Technology (IST).
- Member of the EDI Committee at Mila - Quebec AI Institute, 2024
- Evaluator for the Mila Student Recruitment program, since 2024.
- Evaluator for the Mila Excellence scholarships - EDI in Research.

Technical Skills

- **Programming:** Python, Java, Javascript.
- **Software & Frameworks:** Pytorch, Tensorflow, Keras, OpenCV in Python, Numpy, Scikit-learn, Scipy, Matplotlib, Git, Linux, Fairlearn, AIF360, React Native.
- **Others:** MLFlow, Wandb, HPC cluster

Awards

- Recipient of the ETS internal scholarship, 2026 (CA\$7,500)
- Second place for the 3-Minute Research Presentation Contest at the 2025 ETS student researcher conference
- First prize winner of the 2023 Kaggle AI Report Competition in the AI Ethics category (US\$10,000).
- Recipient of the Mila Excellence scholarships - EDI in Research. Mila, Quebec, 2023 (CA\$25,000).
- Nominated for the best researcher and teacher awards, Innopolis University, Russia, 2021.
- Best student scholarship award from 2014 to 2018, awarded by the president of the Republic of Cameroon.