

SOKHNA DIARRA MBACKE

Email: diarra2339@gmail.com
Google Scholar, Github, LinkedIn

EDUCATION

- PhD in Computer Science** September 2021 - Present
Deep Generative Models, PAC-Bayesian Theory, Neural Network Compression
Université Laval
- Master of Science in Computer Science** January 2017 - August 2018
Completeness for Domain Semirings and Kleene Algebras with Domain
Université Laval
- Bachelor of Science in Mathematics and Computer Science** January 2014 - December 2016
Université Laval

BIBLIOGRAPHY

- A Note on the Convergence of Denoising Diffusion Probabilistic Models**
Preprint, 2023
Sokhna Diarra Mbacke, Omar Rivasplata
- Statistical Guarantees for Variational Autoencoders using PAC-Bayesian Theory**
NeurIPS 2023 (Spotlight)
Sokhna Diarra Mbacke, Florence Clerc, Pascal Germain
- PAC-Bayesian Generalization Bounds for Adversarial Generative Models**
ICML 2023
Sokhna Diarra Mbacke, Florence Clerc, Pascal Germain
- Completeness for Domain Semirings and Star-Continuous Kleene Algebras with Domain**
Master's Thesis
Sokhna Diarra Mbacke

SKILLS

- | | |
|---------------------------|--|
| Languages | English (Fluent), French (Fluent) |
| Computer Languages | Python, C/C++, Java, MATLAB, Latex |
| ML Libraries | Pytorch, Numpy, Pandas, Scikit-Learn, etc |
| Computer Science | Deep Learning, Generative Models (VAEs, GANs), Learning Theory, Design and Analysis of Algorithms, Formal logic, Static Program Analysis |

WORK EXPERIENCE

- DevOps Software Engineer** November 2018 - April 2021
IGM Financial, FDM Toronto

- Software development.
- Building and implementation of new development tools.
- Admin and maintenance of existing tools and servers.

University Lecturer
Université Laval

September 2019 - December 2020
Quebec City

- **Course:** Mathematical Logic and Proof techniques.
- Prepare course material and conceive exams.
- Give formal lectures and grade exams.
- Provide feedback and support for students.

Agile Researcher
Industrielle Alliance (IA Financial Group)

May 2018 - November 2018
Quebec City

- Conduct research in Agile methods and frameworks.
- Produce reports including academic findings and case studies.
- Consult and counsel managers about ways to implement and scale Agile methods.

Computer Science Research Intern
Computer Research Institute of Montreal (CRIM)

May 2015 - August 2015
Montreal

- Academic research in the field of static program analysis and automated testing.
- Conception and implementation of a C language code slicing software.
- Software testing and extensive documentation redaction.

Teaching assistant
Université Laval

Sept. 2014 - Aug. 2018; Sept. 2021 - Present
Quebec City

- Conduct tutorials and labs.
- Mark assignments and tests.
- Provide feedback. Make constructive comments on the work of students.

ACADEMIC ACHIEVEMENTS

Honour List for excellence of Master's thesis (Université Laval, 2018)

National Mathematical Olympiads Silver medalist (Senegal 2013)

Recipient of a 75 000 CAD scholarship in 2013

VOLUNTEER WORK

Member of the Diversity and Inclusion Committee of the Institute Intelligence And Data (IID), Université Laval