

Charles Bricout

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Education

Mila (Quebec Artificial Intelligence Institute) & École de technologie supérieure Montréal, Canada Master of applied science, Computer Science. GPA : 4.06 / 4.3 Expected August 2025

- Research Project : Automated Quality Control of Magnetic Resonance Imaging of Human Brain using Deep Learning supervised by Sylvain Bouix and Samira Ebrahimi Kahou.
- Relevant Coursework : Representation Learning, Deep Learning for Computer Vision.

Sorbonne University Alliance - University of Technology of Compiègne Compiègne, France
Diplôme d'ingénieur (equivalent to a combined BS/MS in engineering), Expected August 2025
Computer Science. GPA : 5 / 5

- Relevant Coursework : Artificial intelligence and symbolic programming, Numerical analysis, Problem-solving and logical programming, Optimization and Operations research, Data analysis and data mining, Vision and machine learning.

Lille University - École polytechnique universitaire de Lille Lille, France
Preparatory Classes for Engineering School. June 2021

Selected Course Projects

Optimal Scheduling of Quests in the Game Dofus University of Technology of Compiègne, Winter 2023

- Retrieve quests and map data from multiple APIs using Python.
- Develop a Python library to interact with the database and compute a precedence graph for any quest.
- Optimize quest sequence by determining the best succession path from the starting quest to a target quest, minimizing travel distance using Answer Set Programming (ASP / Clingo).

Full Implementation of the Carcassonne Board Game University of Technology of Compiègne, Fall 2022

- Implement the base board game logic in C++ with an extensible design.
- Add three game extensions to enhance gameplay
- Develop a user interface using the Qt library.

Fundings & Awards

- Research scholarship funded through the Accelerating Medicine Partnership Schizophrenia program.
- *Bourses d'Excellence et de Rayonnement International*, Grant for academic excellence, University of Technology of Compiègne.

Presentations

- "A Deep Learning Framework for Detection of Motion Artifact in Brain MRI Volumes", Medical Imaging Seminar, École de Technologie Supérieure, Montréal, April 2024.

Professional Experiences

Fruition Sciences

Montpellier, France

Freelance Developer

February 2023 – August 2024

- Engineered new features for Fruition Sciences products 360viti and App Sapflow.
 - Scala, Typescript, Angular, PostgreSQL, Cassandra.
- Implement and debug computing pipelines.
 - Scala, Cassandra, RabbitMQ.

Intern Developer

August 2022 – February 2023

- Develop a program to compute climatic and biological statistical indicators on large datasets.
 - Scala, Cassandra, PostgreSQL, Apache Spark, Cron Job.
- Implement flow-based computation for formatting irrigation data from IoT devices.
 - Scala, Cassandra, RabbitMQ.
- Design and create interactive maps to visualize data.
 - Scala, PostgreSQL, Typescript, OpenLayer.

Community Involvement

École de Technologie Supérieure's Sustainable Development Committee

Montréal, Canada

Project Manager

September 2023 – Present

- Manage the creation of a sustainable student coffee shop and the integration of a green roof for in-place vegetable production.
- Create a low-emission website, based on the LowTech Journal practice, using solar power.
 - Hugo, Markdown, Nginx, Raspberry Pi.
- Lead initiative to use sewable patches instead of printing T-shirts for the Student Association's clubs.

École de Technologie Supérieure's Music Club

Montréal, Canada

Administration Committee Member

September 2023 – Present

- Assist with event organization.
- Welcome new members.
- Manage two music bands with multiple shows.

University of Technology of Compiègne's Music Club

Compiègne, France

IT Manager

January 2022 – June 2022

- Create an interactive timetable website to manage practice rooms.
 - PHP, Laravel, Javascript, Angular, MariaDB.
- Manage tickets and payments systems for events.

Auby's Diving Club

Auby, France

Fullstack developer

June 2020 – April 2022

- Create and maintain a web application to manage events, members, and equipments of a diving club.
 - PHP, CodeIgniter, Javascript, MariaDB.

Competitions & Projects

41st NA-MIC Project Week, MIT, Cambridge, USA

June 2024

- Implement a Python plugin for the 3D Slicer software to predict motion scores.

Mila's Morocco Solidarity Hackathon, Montréal, Canada

September 2023

- Implement Proof of Concept to detect and map roads on satellite imaging with deep learning.
 - Python, Pytorch.
- Winning team.

Psyple's Computer Vision Hackathon, Compiègne, France

April 2023

- Train a CNN model on data collected during the event to detect different kind of defects on water bottle caps.
 - Python, Roboflow, RabbitMQ.

French Tournament of Young Mathematician, France

January - May 2019

- Work in a team on open problems for 5 months.
- Present solutions in front of an academic jury.
- Discuss and debate on each team's solution.
- Rank first at regional phase in Lille.

Skills

Programming : Python, C++, Scala, Typescript, SQL, Apache Spark, Slurm, Prolog.

Machine Learning and Data Science: Pytorch, Lightning, Monai, Scikit-learn, Numpy, Pandas, Matplotlib, Seaborn.

Laboratory: Deep Learning Model design, training and evaluation, Multiple GPU training, Reproducibility.

Language: French (Native), English (Fluent), German (Intermediate).

Academic References

Sylvain Bouix

Professor

Department of Software Engineering
and Information Technology

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Montreal

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Samira Ebrahimi Kahou

Professor / CIFAR AI Chair

Department of Electrical and
Software Engineering

Mila / University of Calgary

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Aaron Courville

Professor / CIFAR AI Chair

Department of Computer Science and
Operational Research

Mila / University of Montréal

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Interests

Singing, Bass Guitar, Ecology, Brain study, Hiking.