

Emma Rousseau

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EDUCATION

MSc Bioinformatics *KU Leuven* - Expected graduation 2025

BSc Computer Science and Biology *McGill University* (GPA: 3.50/4.0)

IRCM Foundation Scholarship for Young Researchers Awarded to students for outstanding academic results and interest in graduate studies and biomedical research.

Scholarship for Women in Technology Awarded to women completing their studies in computer science-related fields and displaying outstanding academic results.

DEC Natural Sciences at *CEGEP Edouard-Montpetit* (R-score: 33)

WORK EXPERIENCE

Student developer - Data-Intuitive March 2024 - present

- Contribute to open-source projects such as a workflow repository for bioinformatics data analysis ([Viash Hub - Biobox](#)), implementing key functionalities for analysis pipeline building.
- Collaborate on projects while adhering to code quality standards and version control procedures.

Data science and web development freelancer - Sight Consulting June 2023 - present

- Collaborate with clients to define project objectives, gather requirements, and deliver data-driven solutions tailored to their needs.
- Design and develop responsive, user-friendly websites and dashboards using HTML, CSS, and JavaScript.

Research Assistant - Vogel Lab, McGill University May 2021 - August 2023

- Worked on projects related to bioinformatics such as protein conformation simulations and mass-spectrometry data analysis to improve the efficiency of the research group and generate promising research questions.
- Participated in super-resolution microscopy imaging of yeast mutants and performed computational image analysis to investigate the function of proteins involved in mitosis and cell growth.
- Set up a collaboration between McGill and IRCM professors to study the function of spindle pole proteins using proteomics techniques and combine the expertise of the research groups.

Course mentor - Intro to Programming, McGill University Sep 2020 - Apr 2021

- Held office hours to help students make progress in the course and offered additional online support before important deadlines.
- Helped students understand and apply the course material to concrete programming projects and helped them debug their code on a regular basis.

Bioinformatics intern - Côté Lab, Clinical Research Institute of Montreal Summer 2020

- Developed a pipeline for tandem mass-spectrometry data analysis to reduce computational costs and improve the sensitivity of MS-based experiments.
- Worked on projects related to protein-protein interactions involving statistical analysis in R and Python, and the use of computational biology software such as OpenMS and Proteowizard.
- Acquired extensive knowledge of the Compute Canada servers, as well as batch processing and bash shell scripting.

PROJECTS

"Am I OK?" - Recipient of 2 prizes at MAIS Hacks 2022

[Link to Project](#)

Developed an AI-powered web-based app that connects patients' medical records and appointment history to provide fast and accessible information on their current health condition and prescribed treatments.

"Air Canada Tolerance" - Damaged Aircraft Fuselage Dimensioning

[Link to Presentation](#)

As part of the Air Canada Women in Data Hackathon, my team and I created an Augmented Reality-based app to obtain measurements of aircraft damage within seconds and with more precision than traditional methods, as well as providing a decision aid tool to help maintenance crews determine if a plane should be grounded for reparations.

SKILLS

Programming	Python, Java, R, Linux shell scripting, SQL, Git, Snakemake, HPC clusters, dashboard/web development (R-shiny, Flask, etc).
Other	Scientific writing and research, statistical analysis, data visualization, cellular biology methods