# Emma Rousseau

emmarousseau | emmarousseau1 | emma.rousseau@mail.mcgill.ca | +01.514.814.0865

## 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

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

- Collaborated with clients to define project objectives, gather requirements, and deliver data-driven solutions tailored to their needs.
- Designed and developed 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 - Coté 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 Demo

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, C, C++, Linux shell scripting (bash), SQL, Git, Pytorch ML framework. |
| Other | Scientific writing and research, statistical analysis, machine learning, data visualization, cellular biology methods |