Emmanuelle Coutu-Nadeau, B.Sc., B.Eng.

emmanuelle@coutunadeau.com • www.emmanuellecoutunadeau.com
www.linkedin.com/in/emmanuelle-coutu-nadeau • github.com/emmacona

Education

Master of Sciences, Psychology – *Université de Montréal*	2024 – 2026 (*expected*)
Bachelor of Software Engineering – *McGill University* (CGPA: 3.7/4)	2018 – 2022
Bachelor of Science, Psychology (Honours) – *McGill University* (CGPA: 3.8/4)	2015 – 2018

Research Experience

Neurosciences of Early Development – *CHU Ste-Justine (CRHSJ)*   2024 – Present

- Master's Thesis: AI-driven pattern analysis of steady-state EEG in Autism Spectrum Disorder (ASD).
- Q1K Project: Involved in a major initiative to recruit 1,000 Quebec families with members diagnosed with ASD or related neurological conditions, to undergo questionnaires, genetic profiling (blood sampling), and EEG sessions.
- EEG Testing:
  - Performed EEG testing on participants to identify hormonal changes in women's ASD symptoms.
  - Signal-to-Noise Ratio (SNR) analysis of pilot data for the Q1K project.
- Database Management: Organized and presented database structures to improve data accessibility and integrity within the lab (SQL, REDCap).
- Literature Reviews: Conducted comprehensive literature reviews on:
  - Effect of screen time and video types in teenagers.
  - Intersection of ASD, EEG, and Artificial Intelligence applications.
- Conferences and workshops:
  - *MAIN 2024:* Engaged in hands-on MNE and scikit-learn sessions for MEG and EEG data analysis.
  - *NeuroAI:* Attended weekly discussions on neuroAI at Mila.

Marc O. Martel's Pain Lab – *McGill University (MUHC)*   2016 – 2019

- Honours Thesis: Association between perceived injustice and prescription opioid misuse through opioid craving.
- Skills: Structured clinical interviews, data collection, and saliva sampling.

Work Experience

Product Owner & Project Manager – *CareSimple™*   2022 – Present

- Managing CHUM's Research Project (Transplant'Action) aimed at providing remote patient monitoring (RPM) to liver transplant patients.
- Managing a development team for digital health applications in the European market.
- Generating monthly Key Performance Indicator (KPI) Reports using Python and SQL.
- Certification: PSPO I.

Software Developer – *CareSimple™*   2020 – 2022

- Developing a web-based clinical portal for clinicians to perform RPM (React, TypeScript).
- Certifications: HIPAA & GDPR training.

Data Science Intern – *CareSimple™*   2019

- Analyzing patient health data using R and Python.
- Developing a preprocessing pipeline to standardize data for artificial intelligence algorithms.

Volunteering Experience

Software development & Business strategy Mentor – *Technovation*   2024 – Present

- Mentoring young girls aged 8-18 in mobile app development for UN sustainable goals.

Volunteer & Speaker – *Fondation du PSNM*   2024 – Present

- Engaging in Career Day and organizing panels with successful alumni across various fields.

Event Ambassador – *Fondation du MAC*   2024 – Present

- Promoting for *Printemps du MAC* which aims to provide financial support to the Museum.

Academic Awards & Scholarships

- MES Bourses de persévérance TI (3,000 $)   2022
- Airbus Scholarship in Engineering (1,500 $)   2021
- Second place in "Design principles & methods" Robot Competition   2019
- First place in "Model-based programming" Game Competition   2018
- First-class Honours   2018

Skills

Programming Languages: Python, R, MATLAB, Java, C, PHP, Swift, Assembly, Lisp.
Web Development: TypeScript, JavaScript, CSS, HTML, React, Angular.
Database Management: SQL.

Publications

Peer-reviewed journal article

Verner, Maria MSc; Sirois, Amanda BSc; Coutu-Nadeau, Emmanuelle BSc; et al. *The Association Between Perceived Injustice and Opioid Craving in Patients With Chronic Pain.* Journal of Addiction Medicine, July 21, 2022.

Published abstracts/conference presentations

Herrero Babiloni A *, Frimerman L, Fournier C, Coutu-Nadeau E, Ross A, Lavigne GJ, Martel MO. *Sleep quality and prescription opioid misuse: the potential mediating role of pain intensity, negative affect, and opioid craving.* Sleep Med 2019, Vol. 64, S152-153.

Frimerman L *, Fournier C, Coutu-Nadeau E, Ross A. Martel MO. *Determinants of prescription opioid craving and opioid-related hedonic feelings among patients with chronic pain prescribed opioid therapy.* The Journal of Pain 2019 Vol. 20, Issue 4, S55–S56.

Herrero Babiloni A *, Frimerman L, Fournier C, Coutu-Nadeau E, Ross A, Lavigne G, Martel MO. *Sleep quality and opioid craving among patients with chronic pain and prescribed opioid therapy: explorations of potential mediators.* 11th Congress of European Pain Federation, Valencia, Spain. (September 2019).

Herrero Babiloni A *, Frimerman L, Fournier C, Coutu-Nadeau E, Ross A, Lavigne GJ, Martel MO. *Sleep quality and prescription opioid misuse: the potential mediating role of pain intensity, negative affect, and opioid craving.* World Sleep Congress, 2019, Vancouver, BC, Canada (September 2019).

Frimerman L *, Fournier C, Coutu-Nadeau E, Ross A. Martel MO. *Determinants of prescription opioid craving and opioid-related hedonic feelings among patients with chronic pain prescribed opioid therapy.* 23rd Annual McGill Pain Day, Montreal, Quebec, Canada (January 2019).

Frimerman L *, Fournier C, Coutu-Nadeau E, Ross A. Martel MO. *Determinants of prescription opioid craving and opioid-related hedonic feelings among patients with chronic pain prescribed opioid therapy.* 38th Annual Scientific Meeting of the American Pain Society (APS), Milwaukee, WI, USA (April 2019).

Ouellet N *, Fournier C, Frimerman L, Coutu-Nadeau E, Martel MO. *Factors associated with opioid craving among patients with chronic pain prescribed long-term opioid therapy.* 14th Annual Research Day of McGill's Faculty of Dentistry, Montreal, Quebec Canada. (April 2019).

Frimerman L *, Fournier C, Coutu-Nadeau E, Ross A. Martel MO. *Determinants of Prescription Opioid Craving and Opioid-related Hedonic Feelings Among Patients with Chronic Pain Prescribed Opioid Therapy.* 19th Annual McGill Biomedical Graduate Conference, Montreal, Quebec, Canada. (March 2019).