

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

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Education

Master of Sciences, Psychology – Université de Montréal	2024 – 2026 (<i>expected</i>)
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
<ul style="list-style-type: none"><u>Master's Thesis</u>: AI-driven pattern analysis of steady-state EEG in Autism Spectrum Disorder (ASD).<u>Q1K Project</u>: 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.<u>EEG Testing</u>:<ul style="list-style-type: none">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.<u>Database Management</u>: Organized and presented database structures to improve data accessibility and integrity within the lab (SQL, REDCap).<u>Literature Reviews</u>: Conducted comprehensive literature reviews on:<ul style="list-style-type: none">Effect of screen time and video types in teenagers.Intersection of ASD, EEG, and Artificial Intelligence applications.<u>Conferences and workshops</u>:<ul style="list-style-type: none"><i>MAIN 2024</i>: Engaged in hands-on MNE and scikit-learn sessions for MEG and EEG data analysis.<i>NeuroAI</i>: Attended weekly discussions on neuroAI at Mila.	
Marc O. Martel's Pain Lab – McGill University (MUHC)	2016 – 2019
<ul style="list-style-type: none"><u>Honours Thesis</u>: Association between perceived injustice and prescription opioid misuse through opioid craving.<u>Skills</u>: Structured clinical interviews, data collection, and saliva sampling.	

Work Experience

Product Owner & Project Manager – CareSimple™	2022 – Present
<ul style="list-style-type: none">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.<u>Certification</u>: PSPO I.	
Software Developer – CareSimple™	2020 – 2022
<ul style="list-style-type: none">Developing a web-based clinical portal for clinicians to perform RPM (React, TypeScript).<u>Certifications</u>: HIPAA & GDPR training.	
Data Science Intern – CareSimple™	2019
<ul style="list-style-type: none">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
<ul style="list-style-type: none">Mentoring young girls aged 8-18 in mobile app development for UN sustainable goals.	
Volunteer & Speaker – Fondation du PSNM	2024 – Present
<ul style="list-style-type: none">Engaging in Career Day and organizing panels with successful alumni across various fields.	
Event Ambassador – Fondation du MAC	2024 – Present
<ul style="list-style-type: none">Promoting for <i>Printemps du MAC</i> 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).