





NADINE EL-MUFTI

Canadian Citizen, residing in  Montreal, QC

 (514) 802-3932 |  |  |  |

WORK EXPERIENCE

Climate Change AI Summer Program

Participant

Montreal, Quebec

Jun 2024 – Present

- Engaged in a hands-on AI for climate change program that harnesses machine learning to analyze climate data, shaping environmental policy through data-driven insights.

UX/UI Designer

Freelance

Remote

Jan 2024 – Present

- I bridge the gap between beauty and usability, crafting user interfaces that captivate and drive results. By collaborating with stakeholders, I translate business goals into user-centered solutions.

Concordia University

Teaching Assistant

Montreal, Quebec

Sep 2022 – Dec 2022

- Achieved consistent, accurate grading for Concordia's User Interface Design course SOEN 357 through meticulous assignment and exam reviews, ensuring a transparent evaluation process for students
- Boosted student critical thinking and problem-solving by providing constructive feedback, leveraging strong communication skills.
- Empowered creative project development by fostering a supportive environment and utilizing project management skills. Students explored and implemented innovative solutions with confidence.

Applied Perception Lab

NSERC USRA Research Assistant

Montreal, Quebec

May 2022 – Aug 2022

- Identified surgeons' workflow challenges through detailed questionnaires, collaborating with medical professionals. This led to data-driven opportunities for improved surgical practices.
- Developed Ventriculostomy prototypes to enhance surgeon efficiency, leveraging research insights. These included tablet and HMD options, tackling current hurdles.
- Co-authored a conference paper for MICCAI (Medical Image Computing and Computer Assisted Intervention) 2022's EPIMI (Ethical and Philosophical Issues in Medical Imaging) workshop, presenting a comprehensive User-Centered Design approach to identify and address Ventriculostomy surgeons' workflow challenges, to improve surgical efficiency.

Zero Waste Concordia

Zero Waste Concordia Assistant

Montreal, Quebec

Jan 2022 – Apr 2022

- Championed Concordia's Zero Waste plan by supporting rollout of waste reduction initiatives across campuses, including new recycling procedures and educational programs that minimized waste (targets: 90% diversion from landfills, 50% total waste reduction by 2040).
- Empowered waste reduction compliance through comprehensive waste sorting instructions for students and faculty. This enhanced understanding of sustainability protocols, supporting the university's environmental goals.

Concordia University

Surplus Reuse Coordinator

Montreal, Quebec

Jan 2019 – Jul 2019

- Leveraged data-driven quality assessments to evaluate surplus furniture from Webster Library renovation, ensuring adherence to reuse standards and maximizing furniture redistributed.
- Facilitated efficient surplus redistribution by tracking rated items in an asset management database, coordinating with external parties, and organizing campus garage sales.
- Optimized surplus resource redistribution through a specialized asset management database utilizing systematic data collection and analysis to track and efficiently manage surplus item redistribution.

PROJECTS

Improvements to the EEGNet Model ([Colab Notebook](#))

- Contributed to [open-source BCI](#) advancements by pioneering novel techniques (e.g., Transformer-inspired Temporal Positional Encoding) within the EEGNet architecture. This involved building a custom ETL data pipeline for comprehensive EEG [data processing and cleaning](#) using [pandas](#) for efficient data manipulation. By extracting raw data, transforming it through feature extraction techniques, and loading it into a usable format, this pipeline facilitated the integration of these novel techniques, ultimately enhancing model performance.
- Leveraged a Python environment and libraries like [SpeechBrain-MOABB](#) alongside [NumPy](#), and [Matplotlib](#) with [Seaborn](#) for informative data visualization to establish an efficient [data pipeline and visualization](#) tools. This robust pipeline facilitated streamlined processing, cleaning, and visualization of EEG data throughout The ETL (Extract, Transform, Load) process. The environment, running on a [Google Cloud Engine virtual machine \(GCE VM\)](#), allowed for rapid model development and analysis.
- Employed data augmentation techniques alongside rigorous hyperparameter tuning to optimize EEGNet models. This [data-driven approach](#), emphasizing the transformation stage within the [ETL pipeline](#), significantly improved model accuracy. Two models surpassed the benchmark, while others matched it, highlighting the potential of data engineering and augmentation for future BCI advancements.

Mozna POS ([Preview Video](#))

- Co-led the collaborative development effort of Mozna POS over the course of 8 months, adhering to [Agile methodology](#) to incrementally enhance the product's features and functionality, ultimately securing second place in the Capstone People's Choice Awards.
- Utilized a [MERN](#) (MongoDB, Express.js, React, Node.js) [stack](#) and adhered to [MVC](#) (Model-View-Controller) [architecture](#) to ensure organized and efficient development.
- Implemented comprehensive testing strategies using [React Testing Library](#) and [Jest](#), ensuring the reliability and robustness of the entire application.
- Integrated [API](#) authentication using [JWT](#) (JSON Web Tokens) to enhance security measures and authenticate users effectively.
- Deployed the system on [AWS](#) utilizing [Docker](#) containers for each MVC view and leveraging [S3](#) for static asset storage. This ensured scalability, maintainability, and efficient resource utilization.
- Produced meticulous [documentation](#) for Mozna POS, collectively contributing to the project's success and facilitating seamless understanding and usability for stakeholders, developers, and end-users.

RENT-A-TRUCK ([Data Model Document](#))

- Designed and implemented a centralized data architecture for RENT-A-TRUCK, integrating reservations, missions, drivers, trucks, licenses, invoices, payments, and taxes. This unified structure streamlined data management and facilitated efficient [data insertion, retrieval, and manipulation](#).
- Created a comprehensive [data model](#) including a high-level [conceptual diagram](#) and a detailed [logical model](#). This transparent model ensured clear understanding of the data structure.
- Developed and [normalized](#) a database schema using [BCNF](#) (Boyce-Codd Normal Form) with well-defined relations (tables).

SKILLS

HTML · CSS · JavaScript · React.js · Python · SQL · Data Modeling · Data Analysis · Microsoft Power BI · Tableau · Microsoft Office Suite · UX/UI · Interaction Design · Graphic Design · Adobe Creative Suite · Tech Stewardship · Environmental Stewardship

EDUCATION

Master of Computer Science | Computer Science
Concordia University

Montreal, Quebec
Sep 2024 – Sep 2027

Bachelor of Engineering | Software Engineering
GPA (3.67) | With Distinction
Concordia University

Montreal, Quebec
Jan 2019 – Jun 2024

PUBLICATIONS

[User-Centered Design for Surgical Innovations: A Ventriculostomy Case Study](#)
Lecture Notes in Computer Science — Volume 13755 · Dec 20, 2022

HONORS & AWARDS

NSERC CGS M Award
Issued by Natural Sciences and Engineering Research Council of Canada

Apr 2024

NSERC Undergraduate Student Research Award (USRA)
Issued by Natural Sciences and Engineering Research Council of Canada

May 2022

Bourses d'Excellence for Engineering Scholarship
Issued by The Quebec Ministry of Education

Jun 2022