SYRINE MATOUSSI

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EDUCATION

Mila – Quebec AI Institute, DIRO Université de Montréal Jan 2025 – Present
MSc. Artificial Intelligence, Advisor: Dr. Karim Jerbi, GPA: 3.9/4.3 Montreal, QC, Canada

Smith College, Bachelor of Arts (completed) Sept 2018 – May 2022
Computer Science & Statistical and Data Sciences, GPA: 3.88/4.0 Northampton, MA, USA

Study Abroad – Univ. of Geneva & Graduate Institute of Int'l Studies Fall 2021, Geneva, Switzerland

Pioneer School of Ariana, Baccalaureate (HS Diploma), Mathematics June 2018, Ariana, Tunisia

Kennedy-Lugar YES Program – fully funded exchange program 2015 – 2016
Silver Lake High School, Kingston, MA, USA

RESEARCH EXPERIENCE

Research Assistant - Cognitive & Computational Neuroscience Lab, UdeM
Azrieli Research Centre, CHU Sainte-Justine June 2025 – Present
Supervisor: Dr. Karim Jerbi Co-supervisor: Dr. Aris Hadjinicolaou Montreal, QC, Canada

- Compared four epilepsy prediction methods: fine-tuning and linear probing of foundation models, statistical classification on handcrafted features, and dime reduction on features/embeddings
- Evaluated performance across patient subgroups on 1,400+ preprocessed EEG recordings from diagnosis-seeking children, identifying which approaches generalize best across populations
- Translated model outputs into clinically interpretable visualizations and reports (topographic brain maps, heatmaps ..)

Research Technician 2 – Brain Aging Lab, The Ohio State University June – Dec 2024
Supervisor: Dr. Scott Hayes Columbus , OH, USA

- Automated the generation of large participant reports using Python, reducing manual effort by 50%, in a project investigating how modifiable lifestyle factors can influence healthy brain aging
- Performed data exploration, cleaning, and validation to ensure dataset quality
- Conducted participant appointments and weekly quality checks

Research Assistant (RA) - Human Computation and Vis. Lab, Smith College July 2023 – June 2024
Supervisor: Dr. Jordan Crouser Nothampton, MA, USA

- Utilized R and ensemble methods to construct and optimize over 20 decision trees, random forests, and bagged models for analyzing factors influencing preferences in report analysis
- Conducted data analysis and feature engineering to investigate determinants of trust in data
- Mentored and trained incoming lab assistants in model execution and interpretation

Summer Undergraduate Research Fellowship – RA, Smith College May – Aug 2020
Supervisor: Dr. Jordan Crouser Nothampton, MA, USA

- Analyzed data using R to examine how personality traits impact expert analytical behavior
- Produced over 50 data visualizations to map user behavior and identify workflow patterns
- Computed and interpreted over 20 regression models to correlate individual differences with data coverage and interactions, resulting in a comprehensive 20+ page research report

Cancer Immunotherapy Research Project – RA Feb – May 2020
Supervisor: Dr. Sahar Al Seesi Smith College, Nothampton, MA

- Enhanced a cancer epitope prediction tool in Java to support insertion and deletion mutations
- Developed an interface connecting two tools for predicting the binding strength of epitopes to MHC immune cells

PUBLICATIONS

- **Building and Eroding: Exogenous and Endogenous Factors that Influence Subjective Trust in Visualization**
  Crouser, R. J., Matoussi, S., Kung, L., Pandey, S., McKinley, O. G., & Ottley, A., IEEE VIS (Short Paper)

CONFERENCES

- **2026 (12–13 May): UNIQUE Student Symposium** — Poster Presentation: *"Evaluating and Benchmarking Machine Learning Methods for EEG-Based Classification in Childhood Epilepsy"* (Matoussi *et al.*) Montreal, QC
- **2026 (March 3rd): BRaIN Symposium** — Poster Presentation: *"ML–Based Discovery of EEG Biomarkers in Childhood Epilepsy"* (Matoussi *et al.*) Montreal, QC
- **2025 (12-13 Dec): Montreal AI & Neuroscience (MAIN)** — Poster Presentation: *"ML–Based Discovery of EEG Biomarkers in Childhood Epilepsy"* (Matoussi *et al.*) Montreal, QC
- **2025 (30–31 Oct): UNIQUE 2nd Scientific Retreat** — Poster Presentation: *"ML–Based Discovery of EEG Biomarkers in Childhood Epilepsy"* (Matoussi *et al.*) Le Baluchon, Saint-Paulin, QC
- **2024: IEEE VIS** — Oral Presentation of short paper remote
- **2024: Laboratory for Analytic Sciences Research Symposium** Raleigh, USA
- **2023: Grace Hopper Celebration** — World's largest women-in-tech conference Orlando, USA

TEACHING EXPERIENCE

Teaching Assistant – Arabs in Neuroscience (AiN) Computational Neuroscience Summer School, Jul 2026

- Guided students through coding tutorials and hands-on sessions covering probability, linear algebra, calculus, statistics, and a computational neuroscience final project.

Teaching Assistant – Indigenous Pathfinders in AI, May – Jul 2026

- Designed and taught weekly tutorial sessions that reinforced machine learning concepts through interactive explanations and guided practice.

Tutor – DIRO, Université de Montréal, Sept - Dec 2025

- Hold weekly office hours for students in undergraduate computer science courses, providing guidance, answering questions, and supporting their problem-solving skills

Teaching Assistant – Astronomical Data Sciences, Smith College Spring 2022

- Guided students during weekly labs and held office hours to provide individualized support
- Graded assignments and labs, ensuring timely and constructive feedback

INDUSTRY EXPERIENCE

Software Engineer – DoorDash San Francisco, CA, USA, Sept 2022 – May 2023

- Developed UI features in Swift for the social team in collaboration with cross-functional teams
- Redesigned ratings and reviews section on the store page using Figma designs
- Executed an experiment yielding a 16% improvement in approved review quality
- Conducted weekly feature testing and reported bugs

Technology Intern – United Nations Environment Programme Geneva, Switzerland, Fall 2021

- Built dashboards with Apache Superset visualizing countries' sustainable development progress
- Implemented ReactJS chart plugins allowing descriptive annotations on dashboards

Software Engineer Intern – TIBCO remote, June – Aug 2021

- Refactored 15+ IoT device management components for open-source release
- Implemented AngularJS web features for project AIR with Docker & Kubernetes support
- Added device form validation features for improved user experience

VOLUNTEER EXPERIENCE

Paper Airplanes – Women in Tech Mentor Remote, Feb – May 2021

- Mentored and guided 3 students through a web development class by helping them with project conceptualization, debugging, and answering technical about JavaScript, HTML, and CSS

Kensington International School – Math Mentor February-May 2019, Springfield, MA

- Tutored an elementary school student and supported his academic, social, and emotional adjustment

SCHOLARSHIPS AND AWARDS

- **Award:** Millénium Québecor Best Poster Prize, UNIQUE Student Symposium, 250 CAD 2026
- **Scholarship:** completion scholarship, 6,000 CAD 2026
- **Scholarship:** DIRO Excellence scholarship, 3,930 CAD 2026
- **Scholarship:** Artificial Intelligence scholarship, 5,000 CAD 2026
- **Scholarship:** Diana Kamal Scholarship Search Fund (DKSSF), 5,872 USD/year 2018–2022
- **Honor:** Dean's List, Smith College 2019–2020

SKILLS

- **Programming Languages:** Python, R, Java, JavaScript, Swift
- **Libraries/Frameworks/Tools:** PyTorch, MNE, Pandas, NumPy, React, Angular, Docker, Kubernetes, SQL, GitHub, Figma, Jira
- **HPC/Infra:** SLURM, Compute Canada , distributed GPU training
- **Languages:** English (Fluent), French (Fluent), Arabic (Native)