Mason Kadem

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EDUCATION

MCMASTER UNIVERSITY
MASc in Biomedical Engineering
Faculty of Engineering
Thesis: Interpretable Machine Learning
Keywords: machine learning, interpretability, clinical decision support, prediction models

WESTERN UNIVERSITY
MSc in Neuroscience
Schulich Medicine and Dentistry
Thesis: Pupil size tracks semantic ambiguity
Keywords: cognitive effort, attention, language, signal processing, UX-driven experimental design

WESTERN UNIVERSITY
HBSc in Psychology
Brain and Mind Institute
Thesis: Pupillometry using a webcam
Keywords: human-computer interactions, emergence of cognition, executive functions

CERTIFICATES

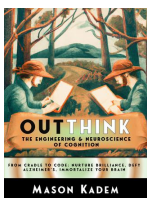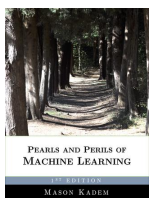Compute Ontario
High-Performance Computing
WESTERN UNIVERSITY
University Teaching
UNIVERSITY OF OXFORD
Machine Learning Theory

BOOKS

PUBLICATIONS

ResearchGate | Google Scholar

Selected Conferences

Association for the Advancement of Artificial Intelligence, Singapore, 2023
Imaging Network Ontario, Canada, 2023

Teaching

TA: Engineering design projects, modelling of bio signals, commercialization/IP law, research methods/statistics
College Prof: programming, digital health+forensics, AI/ML, security, leadership

Invited speaker

AI Health Rounds, eHealth seminars, physiology, biofluid mechanics systems, AI (internationalx2), canadian space agency x2

EXPERIENCE

VASCULARAI.CA | Head of AI, Engineering, and Data Science
May 2022 – Present | Hamilton, ON
Keywords: ML/statistics prediction models, brain microvasculature, data science

RESEARCHONLINE.CA | AI Entrepreneur, CEO + CTO
May 2022 – Present | Dundas, ON
Keywords: large-scale physiological testing online, biophotonics, bioinstrumentation, AI, R&D, ethics, edge computing, security/compliance, funding, data engineering

MOHAWK COLLEGE | Professor of Computer Science
January 2023 – Present
Keywords: computer science and digital health courses, programming, cyber+information security infra, digital forensics, change management

FANSHAWE COLLEGE | Professor of Machine Learning
July 2022 – Dec 2023
Keywords: Developed AI/ML courses, taught cyber ML course

VECTOR INSTITUTE | Consultant: Development + Coach
March 2023 – April 2023 | Toronto, ON
Keywords: ML course development and teaching in Caregivers and Machine Learning program

MCMASTER UNIVERSITY | Various Research Roles
Sep 2019 – November 2022 | Hamilton, ON
Keywords: brain tissue analysis, neuroplasticity, multiscale modelling, multi-modality imaging, medical image analysis, vascular interventions, software development, application lifecycle, design thinking, rapid prototyping, managing software teams, medicine, genetics, biomarkers

SELECTED SERVICE ACTIVITIES

Canadian Space Agency | Invited Neuroscience Consultant
JACC | AI reviewer
HSGSA, Jack Chambers PS | President
Thames Valley District School Board | Judge & Speaker
The Clinic | Health Startup Mentor

SELECTED AWARDS

Year	Award
2023	CIHR CGS-D (Currently in Federal Competition)
2023	MITACS Accelerate Entrepreneur ($90,000)
2023	Canada's NEXT AI interviewee x2
2022	NSERC Vanier Nominee (Federal Competition)
2021	Queen Elizabeth II Scholarship in Science and Technology ($10,000)
2021	E.M. Dalley Fellowship ($5000)
2016	W.O.S.S.A Gold Medal (Captain)/ Varsity Wrestler

SKILLS

shell • python • r • matlab • LaTeX • ML/AI (pytorch, scikitlearn, pandas, numpy) • full stack (django/fastapi, html/css/js/react, postgres) • research methods/statistics/probability • devops (git, docker, CI/CD) • linux/win • signal/image processing • medical data acquisition systems • UX-driven experimental design • communication • management • cloud computing