Mehdi Azad

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https://mabbasiazad.github.io/portfolio

Work experience

Jan 2024 - Present	**College Professor** *George Brown College, School of Computer Technology* Courses: Data Structure and Algorithm/ Object Oriented Programming	Toronto, Canada

Research Assistant/ ML Scientist   Toronto, Canada

May 2021 - Jun 2022(FT) - Nov 2023(Casual)

Hospital for Sick Children (SickKids), Neurosciences and Mental Health

AI expert in a team of experimental and computational neuroscientists

↦ *Built a biotech device prototype automating pain behavior testing in mice (resulting in a high impact publication and a US provisional patent)*

- Applied end-to-end data pipelines for computer vision-based real-time motion tracking robot: Developed & refined models, fine-tuned & optimised their performance

↦ *Proposed a novel score index to evaluate pain behavioural response in preclinical study*

- Drawn insight from withdrawal latency data set followed by through exploratory data analysis/visualization to find meaningful patterns

Data Scientist   Waterloo, Canada

Sep 2019 - Aug 2020

University of Waterloo, Spafford Neurobiology Lab

Data scientist focusing on solving life science problems

↦ *Developed large language models (LLMs) for understanding and designing proteins*

- Predicted antibody 3D structure with generative AI, used in drug discovery

↦ *Pioneered recording and modeling electro physiological data emanating from living organisms*

↦ *Concisely communicated research findings to non-technical and technical audience*

Control Systems Engineer/ Project Manager   Tehran, Iran

Jun 2017 - Nov 2018

Mapna Boiler

Project manager in steam power and water treatment plants

↦ *Managed team of partners (engineering and procurement departments) and stakeholders (clients and contractors) to deliver high quality products on time/budget*

Sep 2014 - Feb 2017

Energy Industries Engineering & Design (EIED)

Control design engineer - Mentor and coach other designers

↦ *Supervised control system design of oil & gas refinery plant and interacted closely with a multi disciplinary team in factory and site acceptance test*

May 2010 - Aug 2014

PoyaKaran Rad

Control systems specialist leading engineering design

↦ *Selected appropriate controllers, servo motors, and motor drivers, to achieve 5 μm accuracy in CNC machines motion control (flagship project)*

Associate Data Scientist   Tehran, Iran

Sep 2007 - May 2010

DanaShahr Co.

Data scientist in a technical and business team designing a technology park

↦ *Interviewed 100+ Iranian oil and gas companies and business stakeholders to identify business needs that must be addressed by policy makers of a technology park*

↦ *Led expert panels and brainstorming sessions to understand the business data to provide advisory recommendations and solutions to the client to make strategic decisions*

Education

2019 - 2020	**University of Waterloo**, MEng in SYSTEMS DESIGN with DISTINCTION
	Specialization: Artificial Intelligence and Machine Learning
	Project: Natural language processing and modeling (NLP)

- Implementing sequence-to-sequence models (LSTM/ transformer) for machine translation and auto-regressive text generation

2004 - 2007	**Iran University of Science & Technology**, MSc in MECHATRONICS
	Thesis: Optimal assign. of seismic vibration control actuators via *genetic algorithm*
	Project: Model-based fuzzy control of an auto swing-up furuta inverted pendulum
2000 - 2004	**Isfahan University of Technology**, BSc in MECHANICAL ENGINEERING

Selected Publications & Patents

C. Dedeck, **M. Azadgoleh**, and S. Prescott. Reproducible and fully automated testing of nocifensive, Cell Reports Methods, November 27, 2023.

C. Dedeck, **M. Azadgoleh**, and S. Prescott. Apparatus for automated pain testing in mice. US provisional patent (18/371.847)

M. Azadgoleh, and A. Markazi. Optimal assignment of seismic vibration control actuators using genetic algorithm. Int. J. of Civil Eng., Structure & Earthquake, 12(1), 21-34, 2014

M. Azadgoleh, B. Hoseinkhani, and A. Markazi. Model-based fuzzy control of an auto swing-up furuta inverted pendulum. IR Patent, 44644, 2007

Certificates

Big Data Analysis with Scala and Spark, EPFL

Build Generative Adversarial Networks (GANs), STANFORD UNIVERSITY

Reinforcement Learning (RL) Specialization, UNIVERSITY OF ALBERTA

Functional Programming Principles in Scala, EPFL

Synapses, Neurons and Brains, HEBREW UNIVERSITY OF JERUSALEM

DNA Decoded, MCMASTER UNIVERSITY

Computer literacy

Programming Language	Python/ Scala/ SQL/ Java/ C#
Tools & Frameworks	PyTorch/ TensorFlow/ Apache Spark/ Scikit-learn/ Docker/ Git
CAD/CAM	Autodesk Inventor
Infrastructure	High Performance Computing/ AWS

Skills

Machine Learning	Computer Vision	Functional Programming	Data Science
Reinforcement Learning	Signal Processing	OOPs	Big Data
Deep Learning	Natural Language Processing	Control & Robotics	Statistical Modeling