

MASOUD JALAYER

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SUMMARY

Specializing in AI-based forecasting, and advanced image/signal-based diagnostics with a strong focus on enhancing AI interpretability and trustworthiness. Proficient in developing agent-based and simulation-based optimization systems to improve various processes, including social networks, quality control, and robotic motion planning. Dedicated to driving impactful innovations within collaborative environments.

SKILLS

Programming & Scripting (Python | MATLAB | C#)



Extended Reality



Explainable AI



Agent-based Modelling



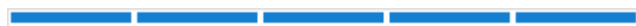
Generative AI



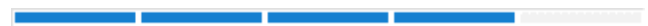
(Multimodal) Deep Learning



Data Analytics and Visualization



(Deep) Reinforcement Learning



WORK HISTORY

Postdoctoral Fellow

08/2024 to Current

University of Turku - Dept. Materials & Mechanical Engineering – Turku, Finland

- SmartCycling – Applying AI for Battery Circular Economy

Visiting Professor

02/2024 to 06/2024

University of Alberta - Dept. Mechanical Engineering – Edmonton, AB, Canada

- Generative AI-based Maintenance Scheduling
- Uncertainty analysis for AI-based Fault Diagnosis

Junior Assistant Professor in Machine Learning

03/2023 to 08/2024

Politecnico di Milano - School of Management – Milan, Italy

- Teaching: *Model Identification & Machine Learning* (054062) - *Machine Learning* (058324) - *Business Analytics and Big Data* (at [GSOM](#))
- Research @[HumanTech](#): Multimodal AI – Human-centered Digital Twins

Postdoctoral Fellow

07/2022 to 03/2023

Unilever – Toronto, ON, Canada

- MITACS postdoctoral fellowship
- AI-based Demand & Shipment Forecasting
- Unsupervised Learning for Customer Segmentation

Postdoctoral Fellow

07/2021 to 03/2023

University of Victoria – Victoria, BC, Canada

- Project 1: *led a team of 5 graduate students*: Digital Twinning - Adaptive Scheduling (NSERC)
- Project 2: *led a team of 2 graduate students*: XAI - Fault Diagnosis

Visiting Researcher

08/2020 to 01/2021

École Polytechnique Fédérale de Lausanne (EPFL) – Lausanne, Switzerland

- Fault Diagnosis of Rotating Machinery under Noisy Conditions
- PV energy generation forecasting with Satellite Images and All-Sky Camera
- Developing W-GANs for Automatic Visual Inspection of Rare Defects

Management Information Systems Specialist

10/2013 to 10/2015

PetroSanaat Co. – Tehran, Iran

- Developing multi-agent decision-support system to simulate operation and maintenance costs in Gas Refinery.

EDUCATION

Ph.D.: Industrial Engineering

07/2021

Politecnico di Milano - Milan, Italy

Thesis: *Applying Artificial Intelligence to Fault Detection and Diagnosis in Manufacturing Systems*

- Fully Funded Scholarship from 2017 to 2021
- Study Abroad: Machine Learning - University of Zurich, Zurich, Switzerland

Master of Science: Industrial Engineering

09/2017

Iran University of Science & Technology - Tehran, Iran

Thesis: *Modelling the Dynamics of Opinion Propagation in Social Networks in Competitive Conditions*

- Graduated summa cum laude
- Teaching Assistant for "System Dynamics"

Bachelor of Science: Industrial Engineering – Safety Engineering

09/2013

Shahid Beheshti University - Tehran, Iran

AWARDS

- Best Presentation - 32nd Int. Conference Flexible Automation and Intelligent Manufacturing, Portugal
- The 2nd most cited article - [Computers in Industry](#)
- Mitacs Elevate Award - Mitacs Postdoctoral fellowship, Canada.
- 3-year Fully Funded Scholarship - Politecnico di Milano
- Ranked#1: Highest GPA among graduate students, Iran University of Science & Technology, 2017

OTHER CONTRIBUTIONS

Master's Thesis Co-Supervision:

- R. Falco, "A Deep Learning approach to 3D Cold Spray shape simulation and toolpath planning optimization", Politecnico di Milano; 2023.
- N. Diale, "An Advanced Forecasting Model to Secure Integration of PV Panels in Smart-Grids", École Polytechnique Fédérale de Lausanne; 2020.
- P. Cernuda González, "Fault diagnosis and detection for bearing using machine learning and deep learning," UPM & Politecnico di Milano; 2019.
- L. Busi & Y. Ramadan, "Big Data Analytics in Maritime," MIP - Politecnico di Milano; 2019.

Guest Associate Editor:

- Machines, MDPI
- Automated Systems, Frontiers

PARTICIPATIONS

- FAIM 2023 - 32nd International Conference Flexible Automation and Intelligent Manufacturing, Porto, Portugal
- IAICT 2021 - IEEE International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology, Indonesia
- *IfI* Doctoral Summer School on Machine Learning - University of Zurich, 2018
- ICML 2020 - 37th Int. Conference on Machine Learning, Vienna, Austria

PUBLICATIONS

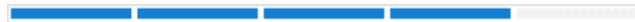
[Google Scholar](#)

OTHER ACTIVITIES

- Music Composition | Piano | Guitar
- Sound Design | Mix & Mastering
- 3D Animation Design
- Acrylic and Chalk Painting

LANGUAGES

English



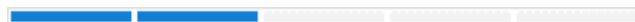
Full Professional

Persian



Native or Bilingual

Arabic



Limited Working

REFERENCES

- Prof. Sara Bagherifard: sara.bagherifard@polimi.it - [webpage](#)
 - Prof. George Tzanetakis: gtzan@cs.uvic.ca - [webpage](#)
 - Prof. Amirali Baniasadi: amiralib@uvic.ca - [webpage](#)
 - Prof. Homayoun Najjaran: najjaran@uvic.ca - [webpage](#)
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