Sahar Dastani Oghani

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EDUCATION

- École de technologie supérieure (ÉTS), Montreal, Canada 2022- 2026
  PhD in Computer Science
  Thesis: Learning spatio-temporal representations for medical data processing
  GPA: 4.3/4.3
- Amirkabir University of Technology, Tehran, Iran 2020- 2022
  M.Sc. in Computer Science
  Thesis: 3D Human Pose Estimation Using Neural Networks
  GPA: 4/4
- Amirkabir University of Technology, Tehran, Iran 2016- 2020
  B.Sc. in Computer Science
  GPA: 3.84/4

PUBLICATIONS

- I.Sheth, P.Braga, S.Sujit, S.Dastani and S.Ebrahimi Kahou: **RelationalUNet for Image Segmentation**. In 2023 MICCAI MLMI Worshop (Published).
- S.Dastani, A.Harakeh, P.Jouvet, and S.Ebrahimi Kahou: **Psychomotor agitation detection using deep learning**. In 2024 WFPICCS Conference (Accepted)
- S.Dastani, A.Harakeh, I.Anokhin, and S.Ebrahimi Kahou: **Self-Supervised Spatio-Temporal Representation Learning of Local Visual Features**. In 2024 ECCV Conference (In progress).

WORKING EXPERIENCE

- **CIFAR** Program Reporter: I was a program reporter in DLRL Summer School of CIFAR and MILA 2023
- Machine Learning Researcher at **CHU Sainte-Justin** - mother and child hospital of Montreal, Montreal, Canada (2022-2026)
- Machine Learning Researcher at **Mila - Quebec AI Institute**, Montreal, Canada (2022-2026)
- Machine Learning Expert at **Holoo Software Engineering Company**,Tehran (Summer 2021)
  - Developing a Recommender System application for Holoo accounting and financial software.

TEACHING EXPERIENCE

- **Representation Learning** Teaching Assistant* at the Université de Montréal-Professor Aishwarya Agrawal
- **Artificial Intelligence** Teaching Assistant* at the Amirkabir University-Professor Mohammad Akbari
- **Machine Learning** Teaching Assistant* at the Amirkabir University-Professor Mohammad Akbari
  ∗ Responsibilities included holding problem-solving sessions, course lectures, and setting and grading homework, and projects.

HONOURS AND AWARDS

- **Upper Bound Talent Bursary, North America 2024**
- **Professor Cho Diversity scholarship**
- **CIFAR scholarship** - DLRL Summer School 2023: I recieved the scholarship for participating in DLRL Summer School of CIFAR and MILA 2023
- **Ranked 1st** among M.Sc students of Soft Computing and Artificial Intelligence whom started their graduate studies in the academic year of 2020-2021.
- **Ranked within the top 0.1%** in Iran's 2020 National Universities Entrance Exam for computer science master's program.
- **Ranked within the top 2%** in Iran's 2016 National Universities Entrance Exam.

RELEVANT COURSES

Ph.D. in Computer Science:
• Representation Learning(A+: 4.3/4.3)
M.Sc. in Computer Science:
• Advanced AI(18.4/20)
• Machine Learning (18.5/20)
• Deep Learning (18.5/20)
• Advanced Algorithms (20/20)

B.Sc. in Computer Science:
• Artificial Intelligence (20/20)
•Numerical Analysis Foundation(18.3/20)
• Linear Optimization (16.5/20)
• Nonlinear Optimization (17.5/20)

SELECTED PROJECTS

- **PhD (ÉTS)**
  - **Relational UNet for Image Segmentation:** Introducing a new architecture, a Relational UNet-based model for semantic segmentation of medical images. We re-interpreted the original idea of RSA for depth relations and the UNet base architecture to learn such relations in a long-range manner along with spatial relations. Published in MICCAI (MLMI) 2023.
  - **Psychomotor agitation detection using deep learning:** The project focuses on developing an automated video analysis system for a Pediatric Intensive Care Unit using deep learning to assess anxiety and distress indicators in pediatric patients during medical transportation.
    Submitted to WFPICCS Conference 2024.
  - **Self-Supervised Spatio-Temporal Representation Learning of Local Visual Features:** Presenting an innovative architecture designed to concurrently capture both local and global features within video clips. This endeavor represents an expansion of the VICRegL model, specifically tailored for video data. Will be submitted to ECCV Conference 2024.
- **Master (AUT)**
  - **Human Pose Estimation using Neural Networks:** Classified the final 3D human poses using multi-view learning in an occlusion scenario and addressed the inherent ambiguity in 2D to 3D lifting by utilizing a deep conditional variational autoencoder (CVAE).
- **Holoo Software Engineering Company**, Tehran, Iran
  - **Recommender System:** Implemented a recommender system that offers products to customers based on their interests. In this way, I used weighted collaborative filtering, association rules, customers' click-through rate in the Holoo retail website, context-aware recommender system techniques to find customers' interests, and the combination of collaborative filtering and demographics to tackle the cold start problem. I also benefit from deep learning techniques to build a convolutional neural network (CNN) based recommender system for processing multi-media data.

COMPUTER SKILLS

- Programming Languages:
  - Expert: Python, Matlab, C++, C
  - Familiar: LaTex, R
- Machine Learning Libraries: Numpy, Pandas, Scikit-Learn
- Deep Learning Platforms: Pytorch, Keras, TensorFlow

LANGUAGE SKILLS

- Persian: Native
- English: Fluent (IELTs: B2: 6.5/9)
- German: Elementary (ÖSD A2: 90/90)

REFERENCES

- **Prof. Samira E. Kahou**
  Email :samira.ebrahimi-kahou@etsmtl.net
- **Ali Harakeh**
  Email :ali.harakeh@mila.quebec