

AMJAD SEYEDI

Graduate Research Assistant

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 Representation Learning Lab (222), Computer Engineering Department, Engineering Faculty, University of Kurdistan, Sanandaj, Iran

BRIEFLY

As a graduate research assistant at the University of Kurdistan, I work on representation learning with a focus on robustness and generalization. I also lead the Algebraic Machine Learning Team (AML team), a group that explores fundamental methods in unsupervised machine learning and representation theory. I have a Master's degree in Artificial Intelligence from the same university, where I worked with Dr. Parham Moradi and Dr. Fardin Akhlaghian on matrix factorization and low-rank approximation for various applications such as semi-supervised learning, recommendation systems, and multi-label classification. I also have an Associate and a Bachelor's degree in Software Engineering.

RESEARCH INTERESTS

- Machine learning, Representation learning, Numerical Linear Algebra
- Generalization, Low-rank approximation, Adversarial training
- Deep Learning, Self-supervised/Semi-supervised learning
- Robustness, Fairness, Interpretability, Explainability

EDUCATION

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| Master | Artificial Intelligence, UNIVERSITY OF KURDISTAN, SANANDAJ, IRAN, (Sep 2015 – Feb 2018) <ul style="list-style-type: none">➢ Thesis title : A Graph-based Semi-Supervised Learning Approach for Multi-Label Classification.➢ Advisors : Dr. Parham Moradi and Dr. Fardin Akhlaghian.➢ Courses : machine learning, statistical pattern recognition, neural networks, advanced artificial intelligence, computer vision, digital image processing, distributed systems, and fuzzy sets & systems. |
| Bachelor | Software Engineering, AMIRKABIR TECHNICAL COLLEGE, ARAK, IRAN, (Jan 2012 – Jun 2014) <ul style="list-style-type: none">➢ Project title : Manufacturing and Setting up a Video Conferencing Software. |
| Associate | Computer Software, TABRIZ TECHNICAL COLLEGE, TABRIZ, IRAN, (Jan 2009 – Jun 2011) <ul style="list-style-type: none">➢ Supplementary courses in computer science and software engineering. |
| TechSchool | Computer, TALEGHANI HIGH SCHOOL, SANANDAJ, IRAN, (Sep 2005 - Jun 2007) <ul style="list-style-type: none">➢ A two-year education in basic computer science |

EXPERIENCE

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| Thesis Advisor | Artificial Intelligence (graduate), UNIVERSITY OF KURDISTAN, SANANDAJ, IRAN, (Sep 2020 - Present) <ul style="list-style-type: none">➢ eight students have graduated. I am currently advising four master's students.➢ Topics : representation learning, deep learning, matrix factorization, semi-supervised learning, self-supervised learning, robust learning, and sparse coding.➢ problems : data representation, data clustering, graph clustering, recommendation systems, link prediction, and feature selection. |
| Research Assist. | Representation Learning, UNIVERSITY OF KURDISTAN, SANANDAJ, IRAN, (Sep 2019 – Present) <ul style="list-style-type: none">➢ Topics : matrix factorization, distributionally robust learning, generalization, and adversarial training➢ applications : image inpainting and recommendation systems. |
| Teaching Assist. | Artificial Intelligence (graduate), UNIVERSITY OF KURDISTAN, (Jan 2019 – Present) <ul style="list-style-type: none">➢ Advanced Concepts in Artificial Intelligence (Graduate), Spring 2023, Fall 2023➢ Nonnegative Matrix Factorization for Machine Learning (Graduate), Fall 2022➢ Pattern Recognition (Graduate), Spring 2019 – Spring 2023➢ Special Topics in Artificial Intelligence (Graduate), Fall 2021➢ lectures : Semi-supervised learning, Modern Machine Learning Paradigms, Nonnegative matrix factorizations, Transformer Networks |
| Lab Instructor | Computer Lab (undergraduate), UNIVERSITY OF KURDISTAN, SANANDAJ, IRAN, (Fall 2019) <ul style="list-style-type: none">➢ I had two 14-person classes on computer basics. |

- Under-Review** | **A Bi-level Deep Human Action Representation based on the Sequence of Action Segments**
F. Akhlaghian, M. Ramezani, H. Afshoon, **S. A. Seyedi**, and A. Moradiani
Neural Computing and Applications [3rd Revision], November 2023.
- 2024** | **Towards Cohesion-Fairness Harmony : Contrastive Regularization in Individual Fair Graph Clustering**
S. Ghodsi, **S. A. Seyedi**, and E. Ntoutsu.
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 2024 [Accepted].
- Orthogonal Encoder-Decoder Factorization for Unsupervised Feature Selection**
M. Mozafari, **S. A. Seyedi**, R. Pirmohamadiani, and F. Akhlaghian.
Information Sciences, 2024.
- Multi-Label Feature Selection with Global and Local Label Correlation**
M. Faraji, **S. A. Seyedi**, F. Akhlaghian, and R. Mahmoodi.
Expert Systems with Applications, volume 246, 2024, pp. 123198.
- Deep Asymmetric Nonnegative Matrix Factorization for Graph Clustering**
A. Hajiveisheh, **S. A. Seyedi**, and F. Akhlaghian.
Pattern Recognition, volume 148, 2024, pp. 110179.
- 2023** | **Link Prediction by Adversarial Nonnegative Matrix Factorization**
R. Mahmoodi, **S. A. Seyedi**, F. Akhlaghian, and A. Abdollahpour.
Knowledge-based Systems, volume 280, 2023, pp. 110998.
- Self-Supervised Semi-Supervised Nonnegative Matrix Factorization for Data Clustering**
J. Chavoshinejad, **S. A. Seyedi**, and F. Akhlaghian.
Pattern Recognition, volume 137, 2023, pp. 109282.
- Adversarial Elastic Deep Nonnegative Matrix Factorization for Matrix Completion**
S. A. Seyedi, F. Akhlaghian, A. Lotfi, N. Salahian, and J. Chavoshinejad
Information Sciences, volume 621, 2023, pp. 562-579.
- Deep Autoencoder-Like NMF with Contrastive Regularization and Feature Relationship Preservation**
N. Salahian, F. Akhlaghian, **S. A. Seyedi**, and J. Chavoshinejad
Expert Systems with Applications, volume 214, 2023, pp. 119051.
- 2020** | **Asymmetric Semi-Nonnegative Matrix Factorization for Directed Graph Clustering**
R. Abdollahi, **S. A. Seyedi**, and M. R. Noorimehr
IEEE International Conference on Computer and Knowledge Engineering (ICCKE), 2020, pp. 323-328.
- 2019** | **Self-Paced Multi-Label Learning with Diversity**
S. A. Seyedi, S. S. Ghodsi, F. Akhlaghian Tab, M. Jalili, and P. Moradi
Asian Conference on Machine Learning (ACML), 2019, pp. 790-805.
- 2018** | **Dynamic Graph-based Label Propagation for Density Peaks Clustering**
S. A. Seyedi, A. Lotfi, P. Moradi, and N. N. Qader
Expert Systems with Applications, Volume 115, 2019, pp. 314-328.
- 2017** | **A Weakly-Supervised Factorization Method with Dynamic Graph Embedding**
S. A. Seyedi, P. Moradi, and F. Akhlaghian Tab
IEEE Artificial Intelligence and Signal Processing Conference (AISP), 2017, pp. 213-218.
- A Clustering-based Matrix Factorization Method to Improve the Accuracy of Recommendation Systems**
Z. Shajarian, **S. A. Seyedi**, and P. Moradi
IEEE Iranian Conference on Electrical Engineering (ICEE), 2017, pp. 2241-2246.
- 2016** | **An Improved Density Peaks Method for Data Clustering**
A. Lotfi, **S. A. Seyedi**, and P. Moradi
IEEE International Conference on Computer and Knowledge Engineering (ICCKE), 2016, pp. 263-268.

COMPUTER SKILLS

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| Operating Systems | Microsoft Windows and Linux (ubuntu, CentOS, Fedora, and RedHat distributions) |
| Word processing & Presentation | Office suites and LaTeX LaTeX , Manim (animation engine for explanatory math videos) |
| Vector and raster softwares | Adobe Illustrator, CorelDRAW, Inkscape, Adobe Photoshop, and GIMP |
| Development Tools | Pycharm, Jupyter Notebook, Colab, Visual Studio, IntelliJ Idea, and Eclipse |
| Web design | HTML, CSS, ASP.NET, and JavaScript |

PROGRAMMING LANGUAGES

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| 2019 – present | Python , PyTorch, NumPy, and scikit-learn |
| 2015 – 2020 | MATLAB , linear algebra and visualization |
| 2012 – 2015 | JAVA , object-oriented software engineering and web development |
| 2009 – 2015 | C++ C# , Software Engineering and Web development |
| 2007 – 2009 | Basic Visual Basic , Software Engineering |

REFERENCES

Fardin Akhlaghian, *Associate Professor*
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