SINA TABAKHI

stabakhi1@sheffield.ac.uk https://sinatabakhi.github.io/ https://github.com/SinaTabakhi
https://scholar.google.com/citations?user=G6JSFp8AAAAJ

Education

- **University of Sheffield**, Sheffield, UK. Nov 2021 - Present
  PhD in Computer Science.
  Thesis: Multimodal learning for multiomics.
  Supervisor: Haiping Lu, *Professor*.
- **University of Kurdistan**, Sanandaj, Iran. Sep 2011 - Oct 2013
  MSc in Computer Engineering, Artificial Intelligence.
  Thesis: New feature selection methods based on filter approach using ant colony optimization algorithm.
  Supervisor: Parham Moradi, *Associate Professor*, and Fardin Akhlaghian Tab, *Associate Professor*.
  GPA: 19.45/20; *Rank*: 1/20.
- **Azad University-Sanandaj Branch**, Sanandaj, Iran. Sep 2007 - Sep 2011
  BSc in Information Technology Engineering.
  Thesis: Review of filtering methods in image processing.
  Supervisor: Anvar Bahrampour, *Assistant Professor*.
  GPA: 18.41/20; *Rank*: 1/80.

Research Interests

- Multimodal Learning for Multiomics
- Graph Neural Networks
- Dimensionality Reduction through Feature Selection
- Bioinformatics

Publications

Journal Papers

1. **Sina Tabakhi**, Mohammod Naimul Islam Suvon, Pegah Ahadian, and Haiping Lu, "Multimodal Learning for Multi-Omics: A Survey", *World Scientific Annual Review of Artificial Intelligence*, Vol. 01, pp. 2250004, 2023.
2. **Sina Tabakhi** and Parham Moradi, "Universal Feature Selection Tool (UniFeat): An Open-Source Tool for Dimensionality Reduction", *Neurocomputing* (**IF: 6**), Vol. 535, pp. 156-165, 2023.
3. **Sina Tabakhi** and Parham Moradi, "Relevance–redundancy feature selection based on ant colony optimization", *Pattern Recognition* (**IF: 8**), Vol. 48, pp. 2798-2811, 2015, (**184 citations** as of 20 July 2023).
4. **Sina Tabakhi**, Ali Najafi, Reza Ranjbar, and Parham Moradi, "Gene selection for microarray data classification using a novel ant colony optimization", *Neurocomputing* (**IF: 6**), Vol. 168, pp. 1024-1036, 2015, (**158 citations** as of 20 July 2023).
5. **Sina Tabakhi**, Parham Moradi, and Fardin Akhlaghian, "An unsupervised feature selection algorithm based on ant colony optimization", *Engineering Applications of Artificial Intelligence* (**IF: 8**), Vol. 32, pp. 112-123, 2014, (**411 citations** as of 20 July 2023).

Conference Papers

1. **Sina Tabakhi** and Haiping Lu, "Multi-agent Feature Selection for Integrative Multi-omics Analysis", 44^{th} *Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Glasgow, UK, pp. 1638-1642, 2022.

Honors and Awards

- Achieved the **Best Pitch Award** at the First Workshop on Multimodal AI, Sheffield, UK, 2023.
- Won the **Runner Up Prize** in the Open Research Prize 2023, University of Sheffield, UK, 2023.
- Awarded the **University Research Scholarship**, University of Sheffield, UK, 2021-2025.
- One of the **Top 5 Most Cited Papers** in Last 5 Years Published in Engineering Applications of Artificial Intelligence (Elsevier), 2019.
- Achieved **Outstanding Contribution in Reviewing** certificate, Pattern Recognition (Elsevier), 2018.
- Awarded **Research Grant** for highlighted academic activities, Iran's National Elites Foundation, Iran, 2016.
- Recognized as a **National Elite** by Iran's National Elites Foundation (The Professional National Foundation for Supporting Elites), Iran, 2014.

- **Ranked** 1^{st} (highest GPA) among 20 graduate students, Department of Computer Engineering, University of Kurdistan, Iran, 2013.
- **Honorable Mention** in the 1^{st} Amirkabir Artificial Intelligence Challenges (AAIC2012), Bank Fraud Detection League, Amirkabir University of Technology, Iran, 2012.
- **Ranked** 1^{st} (highest GPA) among 80 undergraduate students, Department of Computer Engineering and IT, Azad University-Sanandaj Branch, Iran, 2011.
- **Honorable Mention** in the Asia Regional ACM Programming Contest, Tehran Site, Sharif University of Technology, Iran, 2008, 2009, and 2010.
- **Ranked** 1^{st} in Internal ACM Programming Contest, Azad University-Sanandaj Branch, Iran, 2008 and 2009.

Work Experience

- **Software Engineer** (part-time), University of Sheffield, Sheffield, UK. Jan 2022 – Present
- **Senior Backend Developer**, Phoenix, Tehran, Iran. Dec 2019 – Oct 2021
- **Senior Backend Developer**, AloPeyk, Tehran, Iran. May 2019 – Nov 2019
- **Web Application Developer**, Jiro Software Engineering Co., Sanandaj, Iran. Jan 2017 – May 2019
- **Research Assistant**, University of Kurdistan, Sanandaj, Iran. Jun 2015 – Apr 2016
- **Research Assistant**, Molecular Biology Research Center, Tehran, Iran. Jul 2014 – May 2015

Teaching Experience

- **Graduate Teaching Assistant**, Scalable Machine Learning, University of Sheffield, UK. Spring 2023
- **Instructor**, Design and Analysis of Algorithms, University of Kurdistan, Iran. Fall 2015
- **Instructor**, Data Structures, University of Kurdistan, Iran. Spring 2015
- **Instructor**, Design and Analysis of Algorithms, Fanavari Abidar Institute, Iran. Spring 2014
- **Teaching Assistant**, Design and Analysis of Algorithms, University of Kurdistan, Iran. Fall 2012 & Spring 2013
- **Teaching Assistant**, Advanced Programming in C++, Azad University-Sanandaj Branch, Iran. Spring 2008

Research Projects

- **Universal Feature Selection Tool (UniFeat)** (https://unifeat.github.io/)
  with Parham Moradi
  Universal Feature Selection Tool (UniFeat) is an open-source tool, developed completely in Java, for performing feature selection process in different areas of research. UniFeat provides a set of well-known and state-of-the-art feature selection methods within the significant auxiliary tools, including performance evaluation criteria, visual displays, statistical analysis, and reduced datasets to compare the performance of feature selection methods.
- **Knowledge-Aware machine LEarning library (PyKale)** (https://pykale.github.io/)
  with PyKale team
  PyKale is a library in the PyTorch ecosystem that aims to make machine learning more accessible to interdisciplinary research. It provides an accessible, scalable, and sustainable design, focusing on multimodal learning and transfer learning for graphs, images, and videos. PyKale promotes green machine learning principles and enables interdisciplinary research in various applications such as bioinformatics, graph analysis, and medical imaging.
- **Onco Gene Selector**
  Onco Gene Selector is Java-based software for gene selection in microarray data using machine learning techniques.

Talks and Posters

- "From Multimodal Learning to Graph Neural Networks", *First Workshop on Multimodal AI*, Sheffield, UK, June 2023.
- "Multi-agent Feature Selection for Integrative Multi-omics Analysis", *N8 CIR Machine Learning Theme Launch*, University of Leeds, UK, November 2022.
- "Multi-agent Feature Selection for Integrative Multi-omics Analysis", 44^{th} *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Glasgow, UK, July 2022.
- "Multimodal Learning for Multi-omics", *Machine Learning Research Retreat*, University of Sheffield, UK, July 2022.
- "Multi-agent Feature Selection for Integrative Multi-omics Analysis", *COM Research Away Day*, University of Sheffield, UK, June 2022.

Memberships

- IEEE Student Membership. since 2012
- IEEE Engineering in Medicine and Biology Society Membership. since 2022

- Iran's National Elites Foundation. 2014-2021
- Exceptional Talents Office of the University of Kurdistan. 2012-2013
- Young Researchers and Elites Club. 2010-2014

Professional Services

- **Reviewer** in IEEE Transactions on Neural Networks and Learning Systems. since 2023
- **Reviewer** in Neural Computing and Applications. since 2023
- **Organizer** of the First Workshop on Multimodal AI, Sheffield, UK 2023
- **Co-organizer** of the Alan Turing Institute's interest group on Meta-learning for multimodal data. since 2022
- **Contributor** to the development of Sheffield Data Science and AI Network with the support of the Turing Network Development Award. since 2022
- **Reviewer** in Pattern Recognition (Elsevier). 2017-2018

Technical Skills

- **Programming Languages**:
  - Proficient in C#, Java.
  - Worked with Python, C/C++.
- **Web Programming**:
  - Experienced in ASP.NET.
  - Familiar with HTML, CSS, Javascript.
- **Databases**:
  - Experienced in SQL server.
  - Worked with MySQL.
- **Operating Systems**:
  - Microsoft Windows.
  - Worked Linux (Ubuntu).
- **IDE**:
  - Microsoft Visual Studio, NetBeans, Eclipse, PyCharm.
- **Version Controls**:
  - Git.

Languages

- Kurdish: Native
- Persian: Native
- English: Fluent (IELTS Academic Score: 6.5)
- Arabic: Basic

References

1. Haiping Lu, Professor, Department of Computer Science, University of Sheffield, UK (E-mail: h.lu@sheffield.ac.uk, Homepage: https://haipinglu.github.io/).
2. Parham Moradi, Associate Professor, Department of Computer Engineering, University of Kurdistan, Iran (E-mail: p.moradi@uok.ac.ir, Homepage: https://research.uok.ac.ir/~pmoradi/en/).
3. Fardin Akhlaghian Tab, Associate Professor, Department of Computer Engineering, University of Kurdistan, Iran (E-mail: f.akhlaghian@uok.ac.ir, Homepage: https://research.uok.ac.ir/~fakhlaghian/en/).