Habib Irani

📍 Austin, TX   🎓 Google Scholar   🆔 ORCID   in habib-irani   🐙 habibirani

Education

Ph.D.   **Texas State University**, Computer Science   Aug 2023 – Present

- **GPA:** 4.0/4.0
- **Advisor:** Dr. Vangelis Metsis
- **Focus:** ML, Time Series Analysis, LLMs, NLP, Healthcare
- **Dissertation title:** Modeling Short and Long-Term Contextual Information in Time Series

M.Sc.   **Shahid Beheshti University**, Information Systems   Sep 2019 – Mar 2022

- **GPA:** 17.13/20 (3.8/4)
- **Advisors:** Dr. Mahmood Fazlali and Dr. Bahar Farahani
- **Thesis:** Auto-tuning HyperParameters of SGD Matrix Factorization-Based Recommender Systems Using Genetic Algorithm

B.Sc.   **University of Tehran**, Physics   Sep 2013 – Sep 2018

Research Experience

Texas State University, Research Assistant   Aug 2023 – Present

- Member of the Intelligent Multimodal Computing and Sensing (IMICS) Laboratory under Dr. Vangelis Metsis
- Conducting interdisciplinary research in Machine Learning, Time Series Analysis, Large Language Models, and Smart Health
- Developing novel time series prediction methods combining Bayesian and deep learning approaches, and new signal-aware positional encoding
- Contributing to open-source research projects (github.com/imics-lab 🔗)
- Mentoring and helping master students in their research and thesis

Publications

Enhancing Time-Series Prediction with Temporal Context Modeling: A Bayesian and Deep Learning Synergy 🔗

Habib Irani, Vangelis Metsis

The International FLAIRS Conference Proceedings, Vol. 37, 2024 - 🐙 TemporalContext-BayesDL

Auto-tuning HyperParameters of SGD Matrix Factorization-Based Recommender Systems Using Genetic Algorithm 🔗

Habib Irani, Fatemeh Elahi, Mahmood Fazlali, Mahyar Shahsavari, Bahar Farahani

2022 IEEE International Conference on Omni-layer Intelligent Systems - **Best Student Paper Award** - 🐙 Auto-tuning

Time Series Embedding Methods for Classification Tasks: A Review 🔗

Habib Irani, Yasamin Ghahremani, Arshia Kermani, Vangelis Metsis

Expert Systems Journal (Wiley) - 🐙 time-series-embedding

Positional Encoding in Transformer-Based Time Series Models: A Survey 🔗

Habib Irani, Vangelis Metsis

International Journal of Machine Learning and Cybernetics - 🐙 positional-encoding-benchmark

DyWPE: Signal-Aware Dynamic Wavelet Positional Encoding for Time Series Transformers 🔗

Habib Irani, Vangelis Metsis

ICASSP 2026 Conference (Under Review) - 🐙 DyWPE

Finetuning Pre-trained Language Models for Bidirectional Sign Language Gloss to Text Translation

Arshia Kermani, *Habib Irani*, Vangelis Metsis

Workshop on Sign Language Processing (WSLP) 2025 - ⛓ bidirectional-gloss-translation

Energy-Efficient Transformer Inference: Optimization Strategies for Time Series Classification ⧉

Arshia Kermani, Ehsan Zeraatkar, *Habib Irani*

International Journal of Computer Applications, Volume 186 - No.81 - **Editor's Choice (May 2025)**

Conference and Presentations

- **The 37th International FLAIRS Conference**, Miramar Beach, Florida, USA (May 19-21, 2024) – "Enhancing Time-Series Prediction with Temporal Context Modeling: A Bayesian and Deep Learning Synergy"
  Travel Grant by the Department of Computer Science, Texas State University
- **IEEE International Conference on Omni-layer Intelligent Systems (COINS)**, Barcelona, Spain (Aug 1-3, 2022)
- **National Artificial Intelligence Research Resource (NAIRR) Pilot Event**, Washington D.C, USA (Feb 19-21, 2025)
  Travel Grant by NAIRR
- **THRC Health Scholar Showcase RSVP**, San Marcos, TX, USA (Apr 4th, 2025) – "A Framework for End-to-End Machine Translation of American Sign Language to English for Improved Telehealth Services for the Hearing Impaired"

Teaching Experience

Texas State University, Teaching Assistant   Fall 2023 – Spring 2025
  - CS 1342: Programming for Scientists and Engineers (Fall 2023 – Spring 2024)
  - CS 1428 & CS 2308: Foundations of Computer Science I & II (Spring 2025)

Shahid Beheshti University, Instructor   Fall 2020
  - Python for Data Mining course

University of Tehran, Teaching Assistant   Fall 2014
  - C++ Programming

Professional Service

Reviewer and Sub-reviewer: IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2024, The 33rd and 34th International Conference on Artificial Neural Networks (ICANN) 2024, 2025
Professional Memberships: IEEE Student Member (2023 – Present)

Technical Skills

Programming Languages: Python (Advanced), C++ (Intermediate), Java (Intermediate)
Deep Learning Frameworks: PyTorch (Advanced), TensorFlow (Intermediate)
Data Analysis Tools: Scikit-learn, SciPy, Pandas, NumPy, Matplotlib
Other Technologies: CUDA, AWS, OpenMP, SQL, Git
Knowledge: Machine Learning, Deep Learning, Time Series Analysis, Transformers, Computer Vision, High-Performance Computing, Natural Language Processing, Large Language Models

Professional Experience

Datis Aryan Gheshm (Dotin), Mobile Product Manager   Jun 2020 – Jul 2023
  - Led innovative product development initiatives for mobile applications
  - Collaborated with cross-functional teams including designers and developers
  - Focused on bringing innovative solutions to market problems and discovering new opportunities

Asa Sepehr Ide Pardaz (ASA), Technical Product Manager　　　　　　　Mar 2019 – Jun 2020
- Managed development of ASA Mobile Application for online services (flight tickets, hotel reservations, SIM card charging)
- Achieved 50,000+ active installations on Google Play within one year of launch
- Led product launch and user acquisition strategies for the startup's main product

Etesal Sanat Miane (ESM), Front-End Developer & Product Manager　　　　Mar 2018 – Mar 2019
- Developed and managed Irancell bike-sharing application (My Bike)
- Contributed to telecom technical solutions for a growing company with international expansion plans

Honors & Awards

- Doctoral Instructional Assistantship, Texas State University (2023-2026 Academic year)
- Invited to join Phi Kappa Phi Honor Society, limited to the top 10% of graduate students (2025)
- Doctoral Merit Scholarship, Texas State University (2023 Academic year)
- Best thesis of the year in Information Systems at Cyberspace Research Institute, Shahid Beheshti University (Jun 2023)
- Best Student Paper Award – 2022 IEEE International Conference on Omni-layer Intelligent Systems (COINS) (Aug 2022)
- Full scholarship from the Faculty of Science as an exceptionally talented student (Sep 2019)
- Top 1% Ranked in Master's Level Entrance Exam among approximately 16,000 participants (Aug 2019)
- Full scholarship from the Faculty of Science as an exceptionally talented student (Sep 2013)
- Top 1% Ranked in Nationwide Bachelor's Level Entrance Exam among approximately 100,000 participants (Jul 2013)

Selected Coursework

PhD Coursework (All 4.0/4.0): Advanced Machine Learning and Pattern Recognition, Deep Learning, Advanced Natural Language Processing, High Performance Computing, Advanced Green Computing, Secure Cyber Physical Systems

Master's Coursework: Fuzzy Set Theory and Applications (19/20), Social Computing: Exploration and Visual Effects (18.4/20), Machine-to-Machine and IoT (17/20), Data Mining: Models, Algorithms, and Application (17.75/20)

Contact

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