

Saman Khamesian

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EDUCATION

- **Ph.D. Computer Science** Jan. 2024 – Expected Jan. 2029
Arizona State University (ASU) Tempe, AZ, USA
 - GPA: 4.00/4.00
- **M.Sc. Computer Engineering - Artificial Intelligence and Robotics** Sep. 2018 – Jul. 2021
Shahid Beheshti University (SBU) Tehran, Iran
 - GPA: 17.59/20.00
- **B.Sc. Computer Engineering** Sep. 2014 – Aug. 2018
Shahid Beheshti University (SBU) Tehran, Iran
 - GPA: 17.16/20.00

TECHNICAL SKILLS

Programming Languages	Python	Kotlin	Java	C++	MATLAB	VHDL			
Python Libraries & Frameworks	TensorFlow	PyTorch	Keras	scikit-learn	Matplotlib	NumPy	SciPy	Pandas	Prophet
	Stable-Baselines3	CleanRL	Gym	OpenCV	Pillow	httpx	OpenPyXL		
Models & Methods	Deep Learning	Reinforcement Learning	Time-Series Modeling & Forecasting				Classical ML		
AI & ML Technologies	Large Language Models		Hugging Face	Tokenizers	Prompt Engineering				
Systems & Platforms	Linux	macOS	Windows						
Other Tools	LaTeX	Git	Django	Parallel & Distributed Computing					

RESEARCH EXPERIENCE

- **Graduate Research Associate (RA)** Jan. 2024 – Present
Embedded Machine Intelligence Lab (EMIL) Phoenix, AZ
 - **GUIDE – Reinforcement Learning for Behavioral Support in T1D:** Designed an RL framework for personalized insulin dosing, meal timing, and activity decisions; trained and evaluated offline and online agents on patient-specific simulators under realistic behavioral and physiological constraints. Conducted with the University of Texas at Austin through the NSF-funded ASU IFML ExpandAI project.
 - **NutriGen – LLM-Based Personalized Meal Planning:** Built an LLM framework that grounds structured meal plans in USDA nutrition data via prompt engineering, achieving 1.55% (Llama 3.1 8B) and 3.68% (GPT-3.5 Turbo) caloric error while minimizing required user input.
- **Research Affiliate** Mar. 2024 – Present
Mayo Clinic Scottsdale, AZ
 - **GLIMMER – Glycemic-Aware Blood Glucose Forecasting:** Developed an architecture-agnostic forecasting framework with a genetic-algorithm-optimized loss function emphasizing dysglycemic regions; improved RMSE by up to 24.6% and MAE by 29.6% over baselines, reaching 98.4% recall and 86.8% F1 for dysglycemia detection with only 10K parameters.
 - **ExActHealth – Mobile App for Food and Activity Tracking:** Designed and deployed an Android application integrating Health Connect smartwatch streams (activity, heart rate, sleep) with structured food logging; ran a 30-day clinical study with 20 type 1 diabetes participants and achieved 87% usability approval.

WORK EXPERIENCE

- **Machine Learning Engineer** Oct. 2021 – Jun. 2023
Mofid Securities Tehran, Iran
 - Designed a stock recommender system using market trends and user behavior to improve engagement.
 - Built LSTM-based models to improve forecasting accuracy and predict stock trading volumes.
 - Implemented spoof detection for eKYC using anomaly detection and video analysis, achieving 98% TPR at 5% FPR.
 - Partnered with data engineers, analysts, and product managers to deliver business-aligned technical solutions.

PUBLICATIONS

[C]=CONFERENCE | [J]=JOURNAL | [S]=IN SUBMISSION

- [J.1] **S. Khamesian**, A. Arefeen, M. A. Grando, B. M. Thompson, and H. Ghasemzadeh, "Glycemic-aware and architecture-agnostic training framework for blood glucose forecasting in type 1 diabetes," *BMC Artificial Intelligence*, vol. 2, no. 1, Art. no. 13, Jul. 2026.
- [J.2] A. Arefeen, **S. Khamesian**, M. A. Grando, B. Thompson, and H. Ghasemzadeh, "GlyTwin: Enhancing digital twin for glucose control in type 1 diabetes using patient-centric counterfactual treatments," *IEEE J. Biomed. Health Inform.*, 2026, in press.
- [S.1] **S. Khamesian**, S. H. Balaji, D. Y. Shi, S. M. Carpenter, D. E. Rivera, W. B. Knox, P. Stone, and H. Ghasemzadeh, "GUIDE: Reinforcement learning for behavioral action support in type 1 diabetes," submitted to *IEEE J. Biomed. Health Inform.*, 2026.
- [C.1] **S. Khamesian**, A. Arefeen, B. M. Thompson, M. A. Grando, and H. Ghasemzadeh, "AZT1D: A real-world dataset for type 1 diabetes," in *Proc. IEEE 21st Int. Conf. Body Sensor Netw. (BSN)*, Nov. 2025.
- [C.2] **S. Khamesian**, A. Arefeen, S. M. Carpenter, and H. Ghasemzadeh, "NutriGen: Personalized meal plan generator leveraging large language models to enhance dietary and nutritional adherence," in *Proc. 47th Annu. Int. Conf. IEEE Eng. Med. Biol. Soc. (EMBC)*, Copenhagen, Denmark, Jul. 2025.
- [C.3] A. Arefeen, **S. Khamesian**, M. A. Grando, B. Thompson, and H. Ghasemzadeh, "GlyMan: Glycemic management using patient-centric counterfactuals," in *Proc. IEEE Int. Conf. Biomed. Health Inform. (BHI)*, 2024.
- [J.3] **S. Khamesian** and H. Malek, "Hybrid self-attention NEAT: A novel evolutionary self-attention approach to improve the NEAT algorithm in high-dimensional inputs," *Evolving Systems*, vol. 15, no. 2, pp. 489–503, 2024.

PATENTS

- [1] H. Zadeh and **S. Khamesian**, "System and methods for blood glucose forecasting using custom loss functions," U.S. Provisional Patent **63/740,772**, filed Dec. 31, 2024.
- [2] H. Zadeh, A. Arefeen, and **S. Khamesian**, "System and methods for modeling and simulating glycemic response for behavioral lifestyle interventions," U.S. Provisional Patent **63/508,235**, filed Jun. 14, 2023.

HONORS AND AWARDS

- **Travel Award**, [ASU Graduate College](#) (2025–26 Q2), Phoenix, AZ Nov. 2025
- **Travel Award**, [IEEE-EMBS Conf. Body Sensor Networks \(BSN\)](#), Los Angeles, CA Nov. 2025
- **Young Professional NextGen Scholar**, [NSF-EMBS-Google](#), Atlanta, GA Oct. 2025
- **Travel Award**, [IEEE-EMBS Conf. Body Sensor Networks \(BSN\)](#), Chicago, IL Oct. 2024
- **Ranked 198th (top 1% of 19,000+)**, National M.Sc. Universities Entrance Examination, Iran Jun. 2018
- **Honorable Mention**, [19th ACM-ICPC Asia Regional Programming Contest](#), Tehran, Iran Nov. 2017
- **Ranked 12th of 100 teams**, [18th ACM-ICPC Asia Regional Programming Contest](#), Tehran, Iran Dec. 2016

ACADEMIC SERVICE & TEACHING

- **Reviewer** Jul. 2025
IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI)
 - Reviewed 6 submissions on wearable sensors, digital twins, and explainable AI.
- **Reviewer** Aug. 2025
IEEE-EMBS International Conference on Body Sensor Networks (BSN)
 - Reviewed 3 submissions on body sensor networks, wearable sensing, and explainable AI.
- **Teaching Assistant** 2015 – 2019
Dept. of Electrical and Computer Engineering, Shahid Beheshti University (SBU), Tehran, Iran
 - Head TA for *Data Structures and Discrete Mathematics*.
 - TA for *Algorithm Design, Advanced Programming (Java), and VHDL*.