Shadan Golestan

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HIGHLIGHTS OF SKILLS

- 5+ years of research experience in artificial intelligence, applied machine learning, and Bayesian optimization
- Excellent communication and problem-solving skills demonstrated by working in the industry as a Data and ML Scientist
- Excellent organization and presentation skills demonstrated by authoring 12 publications

RELATED EXPERIENCE

Ph.D. Research — Sep 2017 – Current

Applied Machine Learning

- Applied the **Bayesian optimization** for evaluating sensor configuration deployments
- Applied the **Reinforcement Learning** for evaluating sensor configuration deployments
- Applied the **Probabilistic Random Forest** for indoor activity recognition
- Applied the **Particle Filtering** and **Artificial Neural Network** for occupancy estimation

Machine Learning Intern, ShopHopper — May 2022 – Aug 2022

Applied Deep Learning

- Applied **deep learning**, and **transfer learning** to detect fashion products' different types, styles, and patterns
- **Supervised** a group of five computer science interns to reach milestones
- **Presented** results to general/technical audience

AI Career Accelerator Program Participant, AMII — Apr 2022 – Current

Applied Machine Learning

- Contributed 60 hours+ of work-integrated learning by developing case studies, applications, and discussion activities in using machine learning in industry

Data Scientist Intern, Visier INC. — Sep 2020 – Apr 2021

Data Science

- Identified a list of **important features** for each customer that yields better **machine learning model** accuracy
- Applied several **data imputation** techniques
- Published two articles about **data conditioning** and **data imputation techniques**

M.Sc. Research — Sep 2014 – Sep 2017

Human Subject Study

- Designed a **human-in-the-loop** architecture for **augmented intelligence** in video games

Software Engineer, Jaboun Co. — May 2014 – Sep 2014

Software Development

- Developed a **communication application** for employees

QUALIFICATIONS

Programming Languages: Python, MATLAB, C++
Tools and Packages: TensorFlow, PyTorch, Jupyter Notebook, Git, AWS Sagemaker

EDUCATION

Doctor of Philosophy, Computer Science — Sep 2017 – Apr 2022 [Expected]

University of Alberta — *Edmonton, Canada*

Related Coursework: Internet of Things, Time-Series Data Fusion in Sensor Networks, Sustainable Computing

Master of Science, Artificial Intelligence and Robotics — Sep 2014 – Sep 2017

University of Tehran — *Tehran, Iran*

Related Coursework: Machine Learning, Fundamentals of Deep Learning, Reinforcement Learning, Advanced Robotics, Bio-Inspired Computing, Social Networks, Advanced Algorithms

Bachelor of Science, Computer Software Engineering — Sep 2008 – Nov 2013

Arak University — *Arak, Iran*

KEY PROJECTS

Artificial Intelligence and Applied Machine Learning

- **Sensor Configuration Optimization:** Proposed a black-box Optimization framework using Bayesian Optimization. Our framework produces sensor configurations that can detect indoor activities significantly more accurate than related work –**Python, OpenBox, scikit-learn**
- **RL-driven Bayesian Optimization:** Proposed a reinforcement learning framework to construct a suitable acquisition function for the Bayesian optimization based on the current optimization state –**Python, Gym, OpenBox, scikit-learn**
- **Indoor Activity Recognition:** Used Probabilistic Random Forest for predicting occupants activities using motion sensors. –**Python, scikit-learn**
- **Data-Driven Models for Occupancy Estimation:** Two data-driven techniques, i.e. Particle Filter and Time Series Neural Networks, were used to accomplish the task for two data sets. –**MATLAB, Neural Network Time Series Toolbox**
- **Fashion Products Image Classification:** Applied Transfer Learning on the ResNet-10 to classify fashion products images into 35 types and 4 styles, which yields 82% and 93% of accuracy, respectively.–**Python, scikit-learn, TensorFlow**
- **Sensor-enabled Functional-Mobility Assessment:** Applied gesture recognition methods using RGBD and pressure sensors for assessing balance skills. **MS .NET, MS Kinect, MS Kinect Studio, MS Visual Studio**

SELECTED PUBLICATIONS

Golestan, Shadan, Omid Ardakanian, Pierre Boulanger, "Sensor Configuration for Accurate Activity Recognition in Indoor Environments using Bayesian Optimization and Building Simulation", IJCAI 2023 (submitted).

Golestan, Shadan, Eleni Stroulia, and Ioanis Nikolaidis. "Smart Indoor Space Simulation Methodologies: A Review." IEEE Sensors Journal (2022).

Golestan, Shadan, Ioanis Nikolaidis, and Eleni Stroulia. "Towards a Simulation Framework for Smart Indoor Spaces." Sensors 20.24 (2020): 7137.

Golestan, Shadan, Petcovici, Alexander, Nikolaidis, Ioanis, and Stroulia, Eleni, "Simulation-Based deployment configuration of smart indoor spaces," IEEE 5th World Forum on Internet of Things (WF-IoT) (WF-IoT 2019), Limerick, Ireland, Apr. 2019.

Golestan, Shadan, Diaz Romero, Dillam, Stroulia, Eleni, Miguel-Cruz, Antonio, and Liu, Liu, "Sensor-enabled Functional-Mobility assessment: An exploratory investigation," IEEE 5th World Forum on Internet of Things (WF-IoT)(WF-IoT 2019), Limerick, Ireland, Apr. 2019.

Zhao, YiJi, Fatemi Pour, Farnoosh, **Golestan, Shadan**, and Stroulia, Eleni. "BIMSim 3D : Multi-Agent Human Activity Simulation in Indoor Spaces." 5th International Workshop on Software Engineering for Smart Cyber-Physical Systems (SEsCPS'19)

Golestan, Shadan, Kazemian, Sepehr, and Ardakanian, Omid. "Data-Driven Models for Building Occupancy Estimation." Proceedings of the Ninth International Conference on Future Energy Systems. ACM, 2018.

Golestan, Shadan, Mahmoudi-Nejad, Athar, and Moradi, Hadi, "A Framework for Easier Designs: Augmented Intelligence in Serious Games for Cognitive Development," IEEE Consumer Electronics Magazine 8.1 (2019): 19-24.

Golestan, Shadan, Soleiman, Pegah, and Moradi, Hadi. "A Comprehensive Review of Technologies Used for Screening, Assessment, and Rehabilitation of Autism Spectrum Disorder." arXiv preprint arXiv:1807.10986 (2018).

Golestan, Shadan, Soleiman, Pegah, and Moradi, Hadi. "Feasibility of using Sphero in rehabilitation of children with autism in social and communication skills." 2017 International Conference on Rehabilitation Robotics (ICORR). IEEE, 2017.

Golestan, Shadan, et al. "Introducing i-puck: An educational mobile robot." 2016 4th International Conference on Robotics and Mechatronics (ICROM). IEEE, 2016.

Soltani, Fakhteh, Eskandari, Fatemeh, and **Golestan, Shadan**. "Developing a gesture-based game for deaf/mute people using microsoft kinect." 2012 Sixth International Conference on Complex, Intelligent, and Software Intensive Systems. IEEE, 2012.