SEPEHR JANGHORBANI

CONTACT

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RESEARCH INTERESTS

Computer Vision | Deep Learning | Natural Language Processing | Artificial Intelligence
Machine Learning | Multi-Modal Learning | Vision and Language | Generative Modelling

EDUCATION

Rutgers University *2017 - 2022 (Expected)*
PhD Candidate - Computer Science (Advisor: Prof. Gerad De Melo) **GPA: 3.91/4.0**
Thesis: Scalable Self-Supervised Representation Learning of World Models

Rutgers University *2017 - 2020*
Master of Science - Computer Science (Concentration: Machine Learning) **GPA: 3.91/4.0**

Sharif University of Technology *2011 - 2016*
Bachelor of Science - Computer Engineering **GPA: 17.16/20.0**

RESEARCH EXPERIENCE

Disney Research (Research Internship) *May 2018- Aug 2018*

- Designed and developed a knowledge extraction model for natural language understanding.
- Designed a hierarchical deep neural model with attention for online dialogue topic modelling. This model was shown to significantly outperform state-of-the-art models.
- Developed a natural language benchmark dataset to evaluate our proposed model.

Rutgers University Machine Learning Lab *May 2017- Present*

- Working on self-supervised deep generative models for Computer Vision and NLP.
- Designed a deep Variational model capable of unsupervised object tracking, video segmentation, video background separation and future-time video prediction.
- Designed a deep Variational Neural Network for high-density crowd movement modelling.

Sharif University Machine Learning and Bioinformatics Lab *2014-2016*

Designed a machine learning model to infer the hidden structure present in non-uniform genetic populations. Our model also identifies genetic factors of complex diseases using Bayesian methods.

PUBLICATIONS

SCALOR: Generative World Models with Scalable Object Representations [Website]
Jindong Jiang *, Sepehr Janghorbani *, Gerard De Melo, Sungjin Ahn **(* Equal Contribution)**
International Conference on Learning Representations (ICLR) 2020

Topic Spotting using Hierarchical Networks with Self Attention
Pooja Chitkara, Ashutosh Modi, Pravalika Avvaru, Sepehr Janghorbani and Mubbasir Kapadia
North American Chapter of ACL (NAACL) 2019

Domain Authoring Assistant for Intelligent Virtual Agents [Demo]
Sepehr Janghorbani, Ashutosh Modi, Jakob Bauman and Mubbasir Kapadia
Autonomous Agents and Multi-Agent Systems (AAMAS) 2019

Statistical Association Mapping of Population-Structured Genetic Data
Amir Najafi *, Sepehr Janghorbani *, S.A. Motahari, Emad Fatemizadeh **(* Equal Contribution)**
IEEE Transactions on Computational Biology and Bioinformatics

HONORS & AWARDS

Awarded $5,000 Fellowship for Excellence *2017*
(Awarded based on credentials and the advisor's recommendation at the time of admission)

Ranked 237th (among the top 0.1%) in the National University Entrance Exam *2011*
(**more than 300,000** participants across the nation.)

Admitted to Sharif University of Technology *2011*
(Ranked the number one university in the country.)

Ranked 11th in the Statewide Students Educational Progress Competition *2006*
(**More than 76000** participants across the state)

Ranked 1st in the Students Scientific Competition across the state. *2003*

Member of National Organization for Development of Exceptional Talents *2004 - Present*

OTHER SELECTED PROJECTS

- Semi-supervised Feature representation learning for categorical data
- A Generalized Method for Fake News Classification using deep Bi-LSTMs
- Classifying Motor Movements from EEG Data Using a Spiking Neural Network

TEACHING EXPERIENCE

Rutgers University *2017-Present*
Massive Data Mining and Deep learning, Artificial Intelligence, Computer Math and Science, Introduction to Algorithm Design, Discrete Structures

Sharif University of Technology *2014-2016*
Artificial Intelligence, Digital Electronics, Computer Architecture

REVIEW EXPERIENCE

Computational Intelligence Journal, AAAI(2021), AISTAT(2020), NAACL(2019) & LDK(2019).

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, C, MATLAB, Prolog, Verilog

Machine Learning Tools : Tensorflow, Pytorch, Scikit-Learn, Pandas

Others : OpenCV, NLTK, Seaborn, Gensim, A/B testing, Statistics, SQL

SELECTED COURSEWORK

Pattern Recognition and Machine learning (CS535), Advanced Machine Learning (CS536), Advanced Algorithm Design (CS513), Probabilistic Agent Learning (CS671-Sem), Massive Data Mining, Retrieval and Deep Learning(CS671-Sem), Applications of Computer Vision on Biomedical Domain (CS580), Artificial Intelligence (CS520), Computer Vision (CS230), Natural Language Processing (CS224)