Arghavan Irankhah

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Education

Ferdowsi University of Mashhad 2019-2022

M.Sc. in Computer Engineering, ***CGPA: 3.88/4*** *(18.78/20),* ***Last Year CGPA: 4/4*** *(19.77/20)*

- **Thesis:** Intelligent demand-side management by predicting household energy consumption based on deep learning networks

Ferdowsi University of Mashhad 2012-2017

B.Sc. in Computer Engineering, ***CGPA: 2.65/4*** *(14.03/20)*

- **Thesis:** Implementing an intelligent system for meeting management written in JAVA-Android Studio

Research Interest

Machine Learning | **Natural Language Processing (NLP)**| **Data Analysis** | **Deep Learning**

Publications

Journal of Building Engineering August 2023

Optimized Short-Term Load Forecasting using CNN-BiGRU for Different Time Horizons

- Authors: **Arghavan Irankhah**, Mohammad Hossein Yaghmaee Moghaddam, Sara Ershadi Nasab
- Status: **Under Review**

12th International Conference on Computer and Knowledge Engineering (ICCKE) Dec 2022

A parallel CNN-BiGRU network for short-term load forecasting in demand-side management

- Authors: **Arghavan Irankhah**, Sahar Rezazadeh, Mohammad Hossein Yaghmaee Moghaddam, Sara Ershadi Nasab, Mohammad Alishahi

The 7th International Conference On Signal Processing And Intelligent Systems,(ICSPIS) Nov 2021

Hybrid Deep Learning Method Based on LSTM-Autoencoder Network for Household Short-term Load Forecasting

- Authors: **Arghavan Irankhah**, Sahar Rezazadeh, Mohammad Hossein Yaghmaee Moghaddam, Sara Ershadi Nasab

Teaching

TA at Ferdowsi University of Mashhad Winter-2021

Performance Evaluation of Computer Systems and Networks, Prof. Mohammad Hossein Yaghmaee Moghaddam

- Teaching Course Materials every week to students
- Designed weekly 5-10 assignments every week
- Co-designed four quizzes and a final exam
- Solving problems and grading quizzes and assignments

Work Experience

Software Engineer August 2023- Present

Khorasan Razavi Electricity Distribution Company (kedc.ir) *Full-time*

NLP Engineer March- May 2023

Internship | Roshan AI Research and Development Company *Part-time*

- Training POS tagger models on Peykare data (HAZM) using the python-crfsuite tool and deep learning models and evaluating and reporting the results.
- Using LSTM model to Ezafe tags and other tags.
- Testing RNN Models such as Bi-LSTM, Simple RNN, and GRU for all tags.
- Constructing Parallel Data with the top-100 similar sentences. Using laser embeddings to extract one vector per sentence. Using pytorch's off-the-shelf cosine similarity function to extract pairwise similarity
- Process dependency tree, reverse just subject and object subtrees, and print out the modified sentence.

AI Developer January-August 2022
Internship | Mashhad Electricity Power Distribution Company *Full-time*

- Implementing a deep learning-based parallel model for predicting energy.
- Analyzed the five-year energy consumption data of Mashahad residential consumers.
- Research on energy management methods with AI.
- Proposed novel parallel method consists of GRU and CNN models.

NLP Engineer August- September 2021
Internship | AhdSoft *Part-time*

- Implement text representation methods.
- Convert a Persian text to semantic vectors.
- NLP text pre-processing using FastText and Word2vec.
- Learn common methods of finding similarity between two documents (Text Similarity).

Research Assistant October 2019- September 2022
IP-PBX Lab *Full-time*

- Researching and developing on efficient deep learning models to prediction.
- Writing two conference papers and receiving the best paper certification award.

Honors & Awards

BEST paper award at ICCKE conference. Nov 2022
12th International Conference on Computer and Knowledge Engineering.

Ranked 3rd among M.Sc. computer engineering students Sep 2022
Ferdowsi University of Mashhad

Received full government fellowship for both bachelor and master studies. 2012, 2019
Ferdowsi University of Mashhad

Grade satisfactory of thesis Sep 2022
Excellent (A+) with grade 19.5/20 for M.Sc.

Projects

Implementing hybrid deep learning method for short-term load forecasting. 2021
Implemented in Python, Jupyter Notebook, Sikit-Learn, Pandas, Numpy.

Implementing Energy Consumption Prediction Models by using K-NN, ANN and SVM. 2021
Implemented in Python, Jupyter Notebook, Sikit-Learn, Pandas, Numpy.

Implementing an intelligent Android application. 2017
Managing appointments between students and professors | implemented in JAVA, Android Studio- MySql.

Implementing uninformed search and informed search algorithms. 2016
BDS, UCS, IDS, DFD, BFS and A, IDA*, RBFS, SMA* on Pac-Man game | Implemented in JAVA.*

Programming & Computer Skills

Languages: Python,JavaScript, HTML/CSS, JAVA, Sql
Frameworks: WordPress | Elementor | Woocomerce
Developer Tools: Jupyter Notebooks, Git, VS Code.
Libraries: TensorFlow, Keras, Pandas, Numpy, Scikit-learn, Matplotlib.
Design Tools: Figam, Adobe Xd
Familiar with: LATEX, CCNA, Linux (Debian distribution), Word2vec, Fasttext.

Languages

- English : Fluent (TOEFL to be held on 2023)
- Persian: Native

Online Courses

Data Analysis with Python [see certificate] Dec 2022
Authorized by IBM and offered through Coursera

Introduction to TensorFlow for Artificial Intelligence[see certificate] Dec 2022
Authorized by DeepLearning.AI and offered through Coursera

Sequences, Time Series and Prediction [see certificate] Dec 2022
Authorized by DeepLearning.AI and offered through Coursera

References

Prof. Mohammad Hossein Yaghmaee Moghaddam, Full professor of Ferdowsi University of Mashhad.
Emails: yaghmaee@ieee.org | hyaghmae@ferdowsi.um.ac.ir

Dr. Behshid Behkamal, Assistant Professor at the Ferdowsi University of Mashhad.
Emails: behkamal@um.ac.ir

Dr. Sara Ershadi-Nasab, Assistant Professor at the Ferdowsi University of Mashhad.
Emails: ershadinasab@um.ac.ir