

Pouya Shaeri

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RESEARCH INTERESTS

- Data Mining and Machine Learning
- Recommender Systems
- Social Media Mining
- Artificial Neural Networks
- Reinforcement Learning
- Deep Learning

EDUCATION

Shahid Beheshti University

TEHRAN, IRAN

M.Sc. in Computer Science

2021 – Present

- **Thesis:** Development of a Semi-Supervised Approach for Fake News Detection
- **GPA: 19.27/20** (4 out of 4) *A⁺*.
 - Faculty Average GPA is 15.49.

Relevant Coursework: Data Mining (19.75/20), Machine Learning (18.81/20), Advanced Machine Learning (19.25/20), Reinforcement Learning (19.25/20), Advanced Algorithms (19.25/20).

University of Tehran

TEHRAN, IRAN

B.Sc. in Mathematics and Applications

2013 – 2020

- **Thesis:** Galois Groups, Irreducible Polynomials and Diophantine Equations

Relevant Coursework: Fundamentals of Computer Science and Programming, Advanced Programming, Linear Optimization, Nonlinear Optimization, Numerical Linear Algebra, Linear Algebra, Probability, Numerical Analysis, Dynamical Systems, Strategic Games, Group Theory, Mathematical Analysis, Fundamentals of Mathematics, Differential Equations.

RESEARCH EXPERIENCE

Research Assistant, Shahid Beheshti University

TEHRAN, IRAN

Under supervision of **Prof. A. Katanforoush**

Fall 2021-Present

- **Thesis: Development of a Semi-Supervised Approach for Fake News Detection**
 - A deep semi-supervised learning model is proposed for fake news detection in **social media** and tested on the **spatio-temporal dataset FakeNewsNet** which is proposed in works of **K. Shu, H. Liu et al.** **The architecture of the model consists of a supervised and an unsupervised CNN which is known as Temporal Ensembling Model for semi-supervised learning.**
- **Self-Supervised Reinforcement Learning for Recommender Systems**
 - A Self-Supervised Reinforcement Learning for Recommender Systems implemented and tested on the dataset RetailRocket utilizing SQN and SAC to perform joint training of the supervised head and the RL head.
- **Learning Customer Journey Behavior**
 - A deep neural network framework incorporating attention mechanism, by considering temporal effect and user characteristics through control variable adjustment. It aims to have a deeper understanding about the dynamic interactions between advertising channels and their contributions to customer conversion.

TEACHING EXPERIENCE

Teaching Assistant, Shahid Beheshti University Advanced Programming: Prof. A. Katanforoush	TEHRAN, IRAN <i>Spring 2022</i>
Teaching Assistant, Shahid Beheshti University Design and Analysis of Algorithms: Prof. A. Katanforoush	TEHRAN, IRAN <i>Spring 2022</i>
Teaching Assistant, Shahid Beheshti University Fundamentals of Programming: Prof. A. Katanforoush	TEHRAN, IRAN <i>Fall 2022</i>
Teaching Assistant, Shahid Beheshti University Data Structures: Prof. A. Katanforoush	TEHRAN, IRAN <i>Fall 2022</i>

SKILLS

- **Concept:** Data Mining, Machine Learning, Neural Networks and Deep Learning (Classical and Modern Learning Methods), Data Preprocessing, Data Visualization, Dimension Reduction, Multiprocessing.
- **Programming Languages:** Python (Proficient), MATLAB (Proficient), C/C++ (Proficient), Java (Proficient), Dart (Flutter Software Development), SQLite.
- **Tools/Packages:** PyTorch, TensorFlow, TRFL, Pyspark, Dask, Scikit-Learn, Numpy, Pandas, Matplotlib, Seaborn, Jupyter Notebooks, Optimization Toolbox (MATLAB), SPSS, Flutter (C++/Dart), JavaFX (Java), Qt (C++).
- **Typesetting:** L^AT_EX, T_EX, Microsoft Office, Google Docs.

SELECTED COURSE PROJECTS

- **Guassian Naive Bayes, Forward and Backward Feature Selection by AUC, PCA, SVM and Decision Trees**, Implemented from scratch in Python, tested on datasets: Mobile Prices and Heart Disease, *Data Mining*, Spring 2022.
- **Data Preprocessing** (including the prediction of null records in a big data), **Gradient Descent Regression, Multiprocessing using Dask and PySpark**, Implemented the regression model from scratch in Python, tested on datasets: Airbnb and Rental Houses in Germany, *Data Mining*, Spring 2022.
- **Time-Series Polynomial and Spline Interpolation using Gregorian and Lunar-Hijri Calendar and Outlier Detection**, Deployed Services using Python platform Flask and Postman, tested on jason dataset samples, *Data Mining*, Spring 2022.
- **Linear and Nonlinear Regression and Classification with Regularization and Hyperparameter Tuning**, Implemented from scratch in Python, tested on datasets: Computers and Heart Disease, plotted the results *Machine Learning*, Fall 2021.
- **Implementing Naive Bayes Classifier, Data Preprocessing and Generating Samples from Probability Distributions**, tested on dataset: Titanic, *Machine Learning*, **Sharif University**, Fall 2021.
- **Polynomial Interpolation (Lagrangian, Hermite, Spline)**, Implemented from scratch in MATLAB, *Fundamentals of Numerical Analysis*, Spring 2019.
- **Games: Minesweeper** Implemented in C++ (using Qt) and **Mastermind** Implemented in Java (Using JavaFX), *Advanced Programming*, Fall 2018.

HONORS AND AWARDS

- Recipient of **Admission for Graduate Study** in Computer Science at **Shahid Beheshti University**, Iran, *Fall 2021*.
- Ranked **22nd** in Computer Science Nationwide Graduate Entrance Qualification Exam (Konkour for graduate study) among more than 30,000 participants, Iran, *Fall 2021*.
- Ranked **2nd** among more than 30 students. **Department of Computer Sciences for Graduate Study, Shahid Beheshti University**, Iran, *Fall 2021 and Spring 2022*.
- Recipient of **Admission** for Bachelor's in Mathematics at **University of Tehran**, Iran, *Fall 2020*.
- Ranked among Top 7% Contestants of the Nationwide University Entrance Qualification Exam (Konkour) among more than 65,000 participants, Iran, *Fall 2012*.
- Ranked **2nd** in "Flutter; Mobile Application Development Framework" Workshop among more than 40 students and Certificated. **Student Scientific Association of Computer Sciences, University of Tehran**, *Spring 2019*.
- Recipient of Full Bachelor's and Master's Tuition Waiver Fellowship

LANGUAGES

• **English:** TOEFL Overall Score 90

• **Persian:** Native

Reading: 23, Listening: 21, Speaking: 22, Writing: 24

REFERENCES

- **Prof. A. Katanforoush**, Faculty of Mathematical Sciences, Shahid Beheshti University, **Email:** a_katanforoush@sbu.ac.ir.
- **Prof. B. Babaali**, School of Mathematics, Statistics and Computer Science, University of Tehran, **Email:** babaali@ut.ac.ir.
- **Prof. M. R. Darafsheh**, School of Mathematics, Statistics and Computer Science, University of Tehran, **Email:** darafsheh@ut.ac.ir.