AmirAli Kaboli | Curriculum Vitae

Amirkabir University of Technology - Department of Mathematics and Computer Science

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EDUCATION

- **Bachelor of Science** Sep 2017-Mar 2022
  Amirkabir University of Technology (Tehran Polytechnic) *Tehran, Iran*
  Ranked 2nd in Iran according to QS Ranking
  - Computer Science
    - GPA: 17.99/20 (3.87/4)
    - Thesis: Intent Detection in Conversational Recommender Systems
      - Grade: 20/20 (4/4)(A^+)

HONORS & AWARDS

- Ranked 2nd in Computer Science, among 64 students, Amirkabir University of Technology, Tehran, Iran
- Winner of the Sparkling Talent Quota from Talented Students Office of Amirkabir University of Technology
- Ranked within the top 1% in the National Entrance Examination 2017, among more than 148,000 participants
- Ranked 4th in the ICPC Selection Contest 2018, among more than 20 teams in Amirkabir University of Technology

RESEARCH INTERESTS

- Natural Language Processing
- Vision and Language
- Social Media Analysis
- Information Retrieval
- Healthcare
- Machine Learning

RESEARCH EXPERIENCE

- Research Assistant Jan 2021-Present
  Amirkabir University of Technology (Tehran Polytechnic) *Tehran, Iran*
  - Under supervision of Dr. Mohammad Akbari
  - Intent Detection in Conversational Recommender Systems
    - Used MultiWOZ dataset
    - Implemented and examined methods of Stack-Propgation, Co-Interactive transformer, Bi-model with decoder, and Joint BERT papers on my dataset
    - Achieved improvements by building a two steps method by combining a binary classification using Fasttext for non-intent utterances and Bi-model with decoder for intent classes
    - Preparing a comparative study paper on intent detection and slot filling joint models
- Github Contributor Feb 2022
  MultiWOZ Dataset
  - Rewritten and made Python2 legacy codes compatible with Python3

PUBLICATIONS

- A. Kaboli, M. Akbari, "Comparative study of Intent Detection and Slot Filling joint models on multi-domains datasets", to be submitted, 2022 (In Preparation)

TEACHING EXPERIENCE

- Undergraduate Teaching Assistant
  - Artificial Intelligence — Fall 2020
    - Under supervision of Dr. Saeed Shiry Ghidary
    - Created class assignments
    - Corrected & graded assignments
  - Introduction to Theory of Computation — Fall 2019
    - Under supervision of Dr. Fatemeh Zare Mirakabad
    - Held class for about 10 students
    - Corrected & graded assignments
  - Foundation of Combinatorics — Spring 2019
    - Under supervision of Dr. Saeed Kazem
    - Held class for about 30 students

WORK EXPERIENCE

- Data Scientist — Mar 2021-Sep 2021
  Cafe Bazaar (App store with more than 45M active users) — *Tehran, Iran*

  I have worked on an application recommender system that contains recommendation and ranking stages. I have achieved improvements based on hit-rate and user engagement metrics.

- Machine Learning Engineer — Oct 2019-Feb 2021
  Sotoon - AI Department (Cloud & AI services provider) — *Tehran, Iran*

  My mission was preparing codes and trained models for production as microservices on distributed systems, making them time and resources usage efficient, and implementing some MVPs for fast delivery.

ACADEMIC PROJECTS

- Papers Recommender — Spring 2021
  - Used SVD matrix factorization as Collaborative Filtering
  - Used Doc2Vec as Content-Based Filtering
  - Implemented a Hybrid method by combining the above methods
- Captcha Detection — Spring 2021
  - Used a method by using PCA plus Random Forest
  - Used Convolutional Neural Networks
- Bank's Customers EDA and Classification — Spring 2021
  - Used EDA techniques to find relations between features and find the best features
  - Used Decision Tree for classifying personal loan customers
- Earthquake Analysis on Spatial Data — Spring 2021
  - Used spatial libraries such as GeoPandas and Folium
  - Estimated a location for building a new station with the most coverage
- Persian Poet Detection — Fall 2020
  - Used classic methods such as SVM, Random Forest, and AdaBoost
  - Used Fasttext for representations and classification
  - Used Recurrent Neural Networks such as LSTM
  - Implemented a UI demo by Streamlit library
- Persian Language Model — Fall 2020
  - Used N-Grams with various smoothing functions
  - Used Recurrent Neural Networks such as LSTM
- Disease Detection based on Reviews — Fall 2020
  - Used TF-iDF vectorizing plus various methods such as Logistic Regression and Random Forest
  - Implemented a UI demo by Streamlit library
- Persian News Classification — Fall 2020
  - Implemented both char-based and word-based classification

- Used TF-iDF vectorizing plus SVM

- Houzz Data Scrapper — Fall 2020
  - Used Scrapy library to implement a spider over houzz.com
- Persian Email Spam Detection — Fall 2020
  - Used TF-iDF vectorizing plus Naive Bayes and KNN
- Twitter Sentiment Analysis — Fall 2020
  - Used Count vectorizing plus SVM
- Persian News Retrieval — Spring 2020
  - Built inverted index and champion lists
  - Used TF-iDF vectorizing
  - Used Cosine similarity measure to find related documents based on a query
- Machine Learning Algorithms — Spring 2020
  - Implemented popular Regression and Classification algorithms without using libraries
- Artificial Intelligence Class Projects — Spring 2019
  - Searching algorithms
  - Regression using genetic algorithm
  - Document's image alignment

COURSES

- Special Topics in Data Mining (M.Sc.) — Spring 2021
  - Data Science
  - Grade: A^+
- Data Mining — Spring 2021
  - Grade: A^+
- Natural Language Processing (M.Sc.) — Fall 2020
  - Grade: A^+
- Special Topics in Computer Science — Fall 2020
  - Social Networks Analysis
  - Grade: A^+
- Information Retrieval — Spring 2020
  - Grade: pass (pass/fail system due to COVID-19)
- Artificial Intelligence — Spring 2019
  - Grade: A^+

ONLINE COURSES

- Machine Learning
- Natural Language Processing with Deep Learning
  - In Progress
- Deep Learning Specialization
  - In Progress
- Advanced Python Programming, project based

EXAM SCORES

- TOEFL iBT: 88 (R: 24, L: 20, S: 20, W: 24)
- GRE General: 306 (Q: 167, V: 139, W: 3.0)

SKILLS

Programming Languages:	C/C++, Python
Libraries:	Numpy, Pandas, Scikit-Learn, Pytorch, Matplotlib, Seaborn, NLTK, Streamlit, Pyspark
Web Technologies:	HTML, CSS, MySQL, Django
Operating Systems:	Linux, Windows
Miscellaneous:	LaTeX, Jupyter, Git, Bash

References, Further information, and Proofs are available upon Request