

# AmirAli Kaboli | Curriculum Vitae

Amirkabir University of Technology - Department of Mathematics and Computer Science

☎ (+98) 939 036 8189 • ✉ amirali.kaboli@gmail.com • 🌐 amiralikaboli.github.io  
📧 amiralikaboli • in amirali-kaboli • 📄 amirali.kaboli

## EDUCATION

- **Bachelor of Science** Sep 2017-Mar 2022  
🎓 Amirkabir University of Technology (Tehran Polytechnic) *Tehran, Iran*  
Ranked 2<sup>nd</sup> 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<sup>+</sup>)

## HONORS & AWARDS

- Ranked 2<sup>nd</sup> 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 4<sup>th</sup> in ACM ICPC Selection Contest 2019, among more than 20 teams in Amirkabir University of Technology

## RESEARCH INTERESTS

- Natural Language Processing
- Social Media Analysis
- Healthcare
- Vision and Language
- Information Retrieval
- 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-Propagation](#), [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
- o Houzz Data Scraper Fall 2020
  - Used Scrapy library to implement a spider over [houzz.com](https://houzz.com)
- o Persian Email Spam Detection Fall 2020
  - Used TF-IDF vectorizing plus Naive Bayes and KNN
- o Twitter Sentiment Analysis Fall 2020
  - Used Count vectorizing plus SVM
- o 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
- o Machine Learning Algorithms Spring 2020
  - Implemented popular Regression and Classification algorithms without using libraries
- o Artificial Intelligence Class Projects Spring 2019
  - Searching algorithms
  - Regression using genetic algorithm
  - Document's image alignment





## COURSES

---

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

## ONLINE COURSES

---

- |   |   |
|---|---|
| o  <u>Machine Learning</u>                               | o  <u>Deep Learning Specialization</u>               |
| - In Progress   | - In Progress   |
| o  <u>Natural Language Processing with Deep Learning</u> | o  <u>Advanced Python Programming, project based</u> |
| - In Progress   |   |

## EXAM SCORES

---

- |  |   |
|--|---|
| o TOEFL iBT: 88 (R: 24, L: 20, S: 20, W: 24) | o 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:	L <sup>A</sup> T <sub>E</sub> X, Jupyter, Git, Bash

❗ References, Further information, and Proofs are available upon Request