

# 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 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

- Ranked 3<sup>rd</sup> in Computer Science, among 64 students, Amirkabir University of Technology, Tehran, Iran.
- Ranked within the top 1% in university entrance exam, among more than 148,000 participants. [Summer 2017]
- Granted admission from Talented Student Office of Amirkabir University of Technology for graduate study.

## 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
    - Examined Stack-Propgation, Co-Interactive transformer, Bi-model with decoder, and Joint BERT paper on my dataset
    - Built a two steps method with combining a binary classification using Fasttext for non-intent utterances and Bi-model with decoder for intent classes
    - Wrote 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 ASSISTANTSHIP

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- o Artificial Intelligence [Fall 2020]
  - Under supervision of Dr. Saeed Shiry Ghidary
  - Defined class assignments
  - Corrected & graded assignments part
- o Introduction to Theory of Computation [Fall 2019]
  - Under supervision of Dr. Fatemeh Zare Mirakabad
  - Held class for about 10 students
  - Corrected & graded assignments part
- o Foundation of Combinatorics [Spring 2019]
  - Under supervision of Dr. Saeed Kazem
  - Held class for about 30 students

## WORK EXPERIENCE

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- o **Data Scientist** Mar 2021–Sep 2021  Cafe Bazaar *Tehran, Iran*
- o **Machine Learning Engineer** Oct 2019–Feb 2021  Sotoon - AI Part *Tehran, Iran*

I have worked in Hezardastan Group since Oct 2019. It contains Cafe Bazaar (app store with more than 45M active users), Divar (buy & sell advertisements platform with more than 35M users), Sotoon (cloud & AI services provider). In Sotoon, I have prepared codes and trained models for production as microservices on distributed systems. In Cafe Bazaar, I have worked on improving an apps recommender system that contains recommendation and ranking parts. It has been evaluated by both hit-rate and user engagement metrics.

## ACADEMIC PROJECTS

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

- Houzz Data Scraper [Fall 2020]
  - Used Scrapy library to implement a spider over [houzz.com](https://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

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

## ONLINE COURSES

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|---------------------------------------------------------|-----------------------------------------------------|
| ○ <u>Machine Learning</u>                               | ○ <u>Deep Learning Specialization</u>               |
| ○ <u>Natural Language Processing with Deep Learning</u> | - Andrew Ng                                         |
| - Chris Manning                                         | - In Progress                                       |
| - In Progress                                           | ○ <u>Advanced Python Programming, project based</u> |

## EXAM SCORES

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

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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

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