ALIREZA SALEMI

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Personal Data

General Information:

First Name: **Alireza**	Date of Birth: **8 Jan. 1999**
Last Name: **Salemi**	Place of Birth: **Bushehr, Iran**

Research Interests:

- **NLP**
- **Neural Networks**
- **Data Science**
- **Machine Learning**
- **Computer Vision**
- **Mathematics**

Education

University of Tehran [website]   Tehran, Iran
B.Sc. student in Computer Engineering   *Sep. 2017 – present*

- Ranked 1st among 103 Computer Engineering students
- GPA: 19.67/20 (4/4)
- Relevant Course Works:

  - ✳ Artificial Intelligence (20/20)
  - ✳ Analysis of Algorithms (20/20)
  - ✳ Data Structures and Algorithms (20/20)
  - ✳ Probability and Statistics (20/20)
  - ✳ Advanced Programming (20/20)
  - ✳ Engineering Mathematics (20/20)

Imam Khomeini High School   Bushehr, Iran
Diploma in Mathematics and Physics Discipline   *Sep. 2013 – Jun. 2016*

- Ranked 1st among 63 Mathematics and Physics Discipline students
- GPA: 19.83/20

Publications

[1] *ARMAN: Pre-training with Semantically Selecting and Reordering of Sentences for Persian Abstractive Summarization*
Alireza Salemi, Emad Kebriaei, Ghazal Neisi Minaei and Azadeh Shakery
To appear in proceedings of **EMNLP-2021**

[2] *UTNLP at SemEval-2021 Task 5: A Comparative Analysis of Toxic Span Detection using Attention-based, Named Entity Recognition, and Ensemble Models [paper]*
Alireza Salemi, Nazanin Sabri, Emad Kebriaei, Behnam Bahrak and Azadeh Shakery
Proceedings of **SemEval-2021**

Research Experiences

Pre-training Language Models with Focus on Summarization   UT, Iran
Under Supervision of Dr. Azadeh Shakery   *Jan. 2021 – Present*

- This research aimed to develop new Transformer-based language models that perform specifically well in summarization. We suggested three novel pre-training objectives and a new abstractive summarization dataset for the Persian language. Furthermore, we tested our models in few-shot and zero-shot situations too. Our models get SOTA results in all available Persian summarization datasets and many NLU tasks.

Toxic Span Detection [repository] [paper]
UT, Iran

Under Supervision of Dr. Behnam Bahrak and Dr. Azadeh Shakery
Aug. 2020 – Feb. 2021

- This research aimed to develop new machine learning models to annotate toxic words of a tweet. We used statistic-based and keyword-based methods as traditional methods of detecting toxicity and compared them with new neural techniques like attention-based and NER-based models.

Model Learning in Software Product Lines [repository][website]
TeIAS, Iran

Under Supervision of Prof. Mohammad Mousavi and Dr. Hossien Hojjat
Jul. 2020 – Dec. 2020

- Ensuring software correctness is an essential discipline of software engineering. Many quality assurance techniques require a model describing the system's behavior. In this research, we survey various methods of extracting behavioral models from software systems, focusing on software product lines.

Decentralized Enforcement in Message-Based Systems [repository]
UT, Iran

Under Supervision of Dr. Fatemeh Ghassemi
Jun. 2020 – Oct. 2020

- In message-based systems, particular ordering of some messages may violate the desired properties such as confidentiality. To make such systems safe, we propose a confidentiality-based runtime enforcement decentralized algorithm that, given an automata-based specification of unwanted message sequences, prevents specific unwanted sequences messages from being sent.

Notable Course Projects

AirHockey, an online multiplayer game for android [repository]
Spring 2021

- Course: Cyber Physical Systems
- Tools: *Java, Android SDK, Python*
- Description: *AirHockey is an online multiplayer distributed android game written using java and android SDK. This application uses Bluetooth to connect devices and simulates a real air hockey game.*

LOGHMEH, an online food delivery website [frontend][backend]
Spring 2020

- Course: Internet Engineering
- Tools: *Java, Spring, Maven, Javascript, react, Docker, kubernetes, mysql*
- Description: *LOGHMEH is an online food delivery website written using Java and Spring for back-end and javascript and React-Web for frontend. Also, Docker and Kubernetes helped to increase the portability of this application.*

Acton, an actor based compiler [repository]
Fall 2019

- Course: Programming Languages and Compilers
- Tools: *Java, Gradle, Antlr, Jasmin*
- Description: *Acton is an actor-based programming language written with Java and produces Java classes using Jasmin that are runnable with JRE. This is a powerful tool to simulate parallel systems.*

FPU, a floating-point processing unit for division and multiplication [repository]
Fall 2019

- Course: Computer Aided Design
- Tools: *Verilog, Python, Modelsim, Vivado*
- Description: *FPU is a floating-point processing unit with division and multiplication commands for single and double floating-point numbers. This module that was written with Verilog and synthesized with Vivado could be used as co-processors.*

Awards

The Best Thesis (Final Project) Award in Computer Engineering [link]
UT, Iran

B.Sc. thesis was selected as the best thesis in the spring 2021 semester
Spring 2021

F.O.E (Faculty of Engineering) Award
UT, Iran

Ranked 1st among all of 103 Computer Engineering students in 2018 and 2019
Fall 2018, 2019

University of Tehran Scholarship
UT, Iran

Received scholarship from the UT Sponsors Foundation as an exceptional talent
Fall 2017 - 2020

University Entrance Examination
Iran

Ranked as top students in at national entrance examination to universities in 2017
Fall 2017

- Ranked 217th (national) and 59th (regional) among more than 148k candidates

Teaching Assistantship

Artificial Intelligence
- Instructor: Dr. Hakimeh Fadaei
- Semesters: Fall 2020, Spring 2021
- Role: Supervisor, responsible for course projects

Programming Languages and Compiler Design
- Instructor: Dr. Fatemeh Ghassemi
- Semesters: Fall 2020, Spring 2021
- Role: Chief TA, responsible for course projects and Homeworks

The Theory of Formal Languages and Automata
- Instructor: Dr. Hossien Hojjat
- Semesters: Spring 2020, Fall 2020, Spring 2021
- Role: TA, responsible for Homework about parsing algorithms and normal forms

Database Design
- Instructor: Dr. Azadeh Shakery
- Semesters: Fall 2020
- Role: TA, responsible for Homework about normal forms in database

Design and Analysis of Algorithms
- Instructor: Dr. Hamid Mahini
- Semesters: Spring 2020
- Role: TA, responsible for Homework about graphs and related algorithms

Engineering Mathematics
- Instructor: Dr. Mahdi Tale Masouleh
- Semesters: Spring 2020
- Role: TA, responsible for Homework about mapping and its applications in solving problems

Skills & Qualities

Academic Skills
Skills that are related to my education and work
- Programming Languages and frameworks: Python, Java, C/C++, R, Dart, Javascript, Verilog HDL, Tensorflow, Keras, Pytorch, Flutter, Numpy, Pandas, Seaborn, Scikit-Learn, Matplotlib, React-web, Express, Spring
- Tools: NLTK, Spacy, Gensim, Transformers, Modelsim, Quartus, Vivado, Multisim, Proteus, MySQL, PostgreSQL, Neo4j, Redis, Elastic Search, Git, Android Studio, LaTeX, Antlr4, Docker, Kubernetes, Maven, Gradle

Personal Qualities
Qualities that are related to my personal abilities
- Organized
- Team Player
- Punctual
- Fast Learner
- Diligent
- Problem Solver
- Creative
- Ethical
- Flexible
- Reliable

Languages

Persian: Native

English: Fluent (I will take the TOEFL test on October 16)

Arabic: Familiar

References

Available upon request.