Sabrina Mokhtari

Email: s4mokhtari@uwaterloo.ca
Linkedin: linkedin.com/in/sabrina-mokhtari
sabrinamokhtari98@gmail.com
Github: https://github.com/SabrinaMokhtari

Education

- **University of Waterloo** — Ontario, Canada
  MMath in Computer Science — *September 2022 - NOW*
  Supervisor: *Gautam Kamath*
  Related Courses: *CS 860: Algorithms for Private Data Analysis (93/100), CS 848: The Art and Science of Empirical Computer Science (100/100), CS 886: Graph Neural Networks (Curruntly Taking)*

- **Sharif University of Technology** — Tehran, Iran
  Bachelor of Science in Computer Engineering; CGPA: 18.40/20 — *September 2017 - July 2022*
  Related Courses: *Machine Learning (19.3/20), Artificial Intelligence(20/20), Linear Algebra (19.5/20), Data Structures and Algorithm(17.9/20), Modern Information Retrieval (17.7/20), Design of Algorithm (20/20), Data Base (19.2/20), Computer Network(19.9/20), Programming Languages (20/20), System Analysis & Design (19.5/20), Software Engineering (20/20)*

Achievements

- **Ranked among top 0.1% participants in the Iranian National Universities Entrance Exam**: September 2017
- **Vector Scholarship in Artificial Intelligence Recipient**: April 2022

Research/Work Experience

- **The Salon** — University of Waterloo
  Graduate Research Assistant Under the Supervision of Prof. Gautam Kamath — *September 2022 - NOW*
  - Working on the impact of transfer learning on private computer vision. More specifically, investigating the role of public data and feature extraction on private machine learning and improving the performance of differentially private learning models.

- **Robust and Interpretable Deep Learning Laboratory** — Sharif University of Technology
  Research Assistant Under the Supervision of Prof. Mohammad Hossein Rohban — *June 2021 - September 2022*
  - Worked on various techniques to train trustworthy vision transformers that are not readily affected by malicious perturbations.

- **Wizeanalytics Startup** — Sharif University of Technology
  R&D and Data Engineer Position Under the Supervision of Prof. Hamid R. Rabiee — *August 2020 - September 2021*
  - Worked on an AI-driven big data processing platform that establishes methods on the data storage layer and distributed big data processing to facilitate predictive analytics.
  - Designed and implemented a comprehensive preprocessing pipeline. Developed several text processing features such as text spell correction, text normalization, and string obfuscation.
  - Enabled the platform to work with and analyze real-time data streaming by connecting the system to Apache Kafka

- **Intelligent Information Solutions Center** — Sharif University of Technology
  Software Developer Under the Supervision of Prof. Jafar Habibi — *June 2019 - September 2019*
  - Worked on MotoShub, a website that helps create domestic social networks. It allows companies, academic societies, and other social groups to create custom social networks to serve as alternatives to popular global platforms.
  - Worked with the software maintenance team. Improved the system's functionality by designing new features, and upgrading and repairing the software when needed.

Selected Course Projects

- **Sarcasm detection, Machine Learning Course (Python/ Pytorch/ Keras)**: Worked on data containing 1.3 million Sarcastic comments from Reddit. Tested various NLP methods to predict sarcasm comments. (June 2020)
- **Admission to the ICU Prediction, Machine Learning Course (Python)**: Implemented a complete life-cycle of data preparation, model creation, and evaluation. Given the recorded clinical data of Covid-19 patients, we wanted to test if it was feasible to predict which patients go to the ICU. (May 2020)
- **Simple ResNet Implementation, Machine Learning Course (Pytorch)**: Implemented a Residual Network from scratch to detect pneumonia in patients using chest x-rays. (June 2020)
- **Information Retrieval system Implementation, Advanced Information Retrieval Course(Python)**: Implemented an Information Retrieval system on text-based data in Persian and English. Utilized classification methods, such as Naive Bayes, SVM, Random Forest, and KNN. Worked on various techniques of natural language processing, including word2vec. (December 2020)
- **Conditional Independence Detection in a Given Bayesian Network, Artificial Intelligence Course (Python)**: Implemented a code that could specify independence between given evidence variables in a specific Bayes Net. (October 2019)
- **Sudoku Game Solver, Artificial Intelligence Course (Python)**: Implemented a Sudoku solver using Constraint Satisfaction Problem (CSP) with AC-3 Algorithm. (October 2019)

Academic Services

- **Member of the Scientific team for the DataDays challenge, Sharif University of Technology**: DataDays is the first and the largest national data scientific competition in Iran, held annually at the Sharif University of Technology. We developed a data-driven challenge around the search logs of torob.com to recommend new products given a raw query. I, with another senior student, was responsible for implementing a baseline for the challenge. (January 2021 - July 2021)
- **Executive Staff at ACM - ICPC, Sharif University of Technology**: ICPC is the largest programming contest among university and college students in the world. The Asian Regional Contest in Iran is hosted by the Sharif University of Technology. I was an executive staff for this event for two consecutive years. I was the event's photographer and also prepared the presentation for the closing ceremony. (October 2018 and October 2019)
- **Executive Staff at the Sharif Artificial Intelligence Challenge, Sharif University of Technology**: This competition is the Iran's Largest AI Competition held at the Sharif University of Technology. I was the event's photographer and prepared the presentation for the closing ceremony. (March 2019)

Teaching Assistant Experiences

- **CS486/684 Introduction to Artificial Intelligence, University of Waterloo**: Designed and graded the first assignment which was related to search algorithms
  (January 2023 - April 2023)
- **CS 105 Introduction to Computer Programming 1, University of Waterloo**: Graded homework and final exams.
  (September 2022 - December 2022)
- **Database Design, Sharif University of Technology, Prof. Abbas Heydarnoori**: Designed and graded relational database assignment.
  (September 2021 - February 2021)
- **Linear Algebra, Sharif University of Technology, Prof. Hamid Reza Rabiee**: Designed and graded linear functions homework.
  (September 2021 - February 2021)
- **Artificial Intelligence, Sharif University of Technology, Prof. Mohammad Hossein Rohban**: Designed and graded machine learning assignments.
  Also prepared supplementary materials for deep reinforcement learning.
  (March 2021 - July 2021)
- **Systems Analysis and Design, Sharif University of Technology, Prof. Abbas Heydarnoori**: Designed and graded the course project end midterm exams.
  (March 2021 - July 2021)
- **Linear Algebra, Sharif University of Technology, Prof. Hamid Reza Rabiee**: Prepared the course lectures for Differential Equations, Symmetric and Positive Definite Matrices
  (September 2020 - December 2020)

Skills Summary

- **Languages**: Python, Java, C
- **Frameworks**: Pytorch, Scikit, Pandas, NumPy, NLTK, SpaCy, Keras, Django
- **Tools**: GIT, Amazon AWS, Power Bi, Tableau
- **Platforms**: Windows, Linux, Web, Android, Arduino, Raspberry Pi
- **Soft Skills**: Communication Abilities, Leadership, Public Speaking, Writing, Time Management

Research Interests

- Differential privacy in Computer Vision and Natural Language Processing

Languages

- **Persian**: Native
- **English**: Fluent (TOEFL:109/120 (R: 29, L: 26, S: 30, W: 24)
- **Arabic**: Beginner

Other Activities

- Horseback riding/ Show jumping (7+ Years)
- Cycling