

# Shahin Atakishiyev

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**CONTACT INFORMATION** Department of Computing Science <https://webdocs.cs.ualberta.ca/~atakishi/>  
University of Alberta, Edmonton, Canada Email: shahin.atakishiyev@ualberta.ca

**EDUCATION**

**PhD in Computing Science** Sep. 2019 - Present  
University of Alberta Edmonton, Canada

- Supervisor: Prof. Randy Goebel

Thesis title: Development of Explainable Artificial Intelligence (XAI) Approaches for Autonomous Vehicles

**MSc in Computer Engineering** Jan. 2016 - Jan. 2018  
University of Alberta Edmonton, Canada

- Supervisor: Prof. Marek Reformat

Thesis title: Evaluation of High-Dimensional Word Embeddings using Cluster and Semantic Similarity Analysis

**BSc in Computer Engineering** Sep. 2010 - Jun. 2015  
Qafqaz University Baku, Azerbaijan

**Full Secondary Education** Sep. 1999 - May 2010  
Mirzabayli Village Full Secondary School Gabala, Azerbaijan

**PAPERS**

6. Shahin Atakishiyev, Mohammad Salameh, Randy Goebel. **Incorporating Explanations into Human-Machine Interfaces for Trust and Situation Awareness in Autonomous Vehicles.** *Under review.*
5. Shahin Atakishiyev, Mohammad Salameh, Hengshuai Yao, Randy Goebel. **Explainable Artificial Intelligence for Autonomous Driving: A Comprehensive Overview and Field Guide for Future Research Directions.** *Under review since Feb 2023.* [PDF]
4. Shahin Atakishiyev, Mohammad Salameh, Housam Babiker, Randy Goebel. **Explaining Autonomous Driving Actions with Visual Question Answering.** *To appear in the Proceedings of the 2023 IEEE International Conference on Intelligent Transportation Systems, Bilbao, Spain, Sep 2023.* [PDF]
3. Shahin Atakishiyev, Mohammad Salameh, Hengshuai Yao, Randy Goebel. **Towards Safe, Explainable, and Regulated Autonomous Driving.** *In Explainable AI for Intelligent Transportation Systems, pp. 33-51, 2023.* [PDF]
2. Mi-Young Kim, Shahin Atakishiyev, Housam Babiker, Nawshad Farruque, Randy Goebel, Osmar R. Zaïane, Mohammad Motallebi, Juliano Rabelo, Talat Syed, Hengshuai Yao, Peter Chun. **A Multi-Component Framework for the Analysis and Design of Explainable Artificial Intelligence,** *Machine Learning and Knowledge Extraction, 3(4), 900-921. 2021.* [PDF]
1. Shahin Atakishiyev and Marek Reformat. **Analysis of Word Embeddings Using Fuzzy Clustering,** *Recent Developments and the New Direction in Soft-Computing Foundations and Applications, pp. 539-551, 2021.* [PDF]

**WORK EXPERIENCE**

**Graduate Research Assistant** Sep. 2019 - Present  
Department of Computing Science, University of Alberta Edmonton, Canada

- Developing XAI approaches for autonomous driving.

- PhD Research Intern** May 2023 - Aug. 2023  
Huawei Technologies Canada Co., Ltd. Edmonton, Canada
- Built a language model for safe and faithful robotic task planning with a team.
- Casual Research Assistant** May 2019 - Aug. 2019  
Centre for Smart Transportation, University of Alberta Edmonton, Canada
- Investigated explainable AI approaches for end-to-end autonomous driving.
- Machine Learning Engineer** Mar. 2019 - Aug. 2019  
Long Tail Financial Corp. Edmonton, Canada
- Developed data-driven platforms for systematic trading of assets in emerging markets by data visualization and predictive modeling in Python.
- Machine Learning Engineer** Feb. 2018 - Oct. 2018  
AltaML Inc. Edmonton, Canada
- Analyzed large drilling data using Python and built predictive models for it.
  - Developed an input correction model in Python that achieved 62.8% accuracy and beat Python’s spellchecker baseline (36%) by 26.8%.
- Software Engineer** Feb. 2015 - Aug. 2015  
MedEffect Digital Clinic Baku, Azerbaijan
- Built an electronic health records (EHR) system for the clinic using PHP, HTML, JavaScript, and MySQL with a team of four people.
- Software Engineer Intern** Apr. 2014 - Jul. 2014  
ATL Tech Baku, Azerbaijan
- Developed an online donation system using ASP.NET, C#, HTML, JavaScript, and MySQL with a team of four people.

**PRESENTATIONS  
& POSTERS**

- **[Presentation] Guest Speaker** Jan. 2024  
Gave a seminar on our XAI- and human-machine interface (HMI)-guided situation awareness framework for autonomous driving to the Interactive Robotics Group of the CSAIL lab at the Massachusetts Institute of Technology, US.
- **[Presentation] Conference Talk** Sep. 2023  
Presented our paper on explaining autonomous driving actions with visual question answering at the IEEE ITSC-2023 Conference in Bilbao, Spain.
- **[Presentation] Guest Speaker** Jan. 2023  
Gave a seminar on the interpretability of reinforcement learning for autonomous driving to the Safe RL group at the Technical University of Munich, Germany.
- **[Presentation] Featured Panelist** Oct. 2022  
Participated as a Featured Panelist at AI4Society’s Ethical Data and AI Salon.
- **[Poster] UAHJIC-2022 Workshop** Aug. 2022  
Presented a poster at the University of Alberta-Huawei Joint Innovation Collaboration Workshop (UAHJIC-2022) in Edmonton, Canada.
- **[Presentation] RLAI Tea Time Talk seminar series** Aug. 2022  
Presented ongoing research in the Tea Time Talks seminar in Edmonton, Canada.
- **[Presentation] Seminar** Jun. 2022  
Gave a seminar on the conceptual framework for explainable autonomous driving at Baku Engineering University in Baku, Azerbaijan.
- **[Poster] AI Week** May 2022  
Presented a poster on ongoing research at AI Week in Edmonton, Canada.

- **[Presentation] AAAI TRASE-2022 Workshop** Feb. 2022  
Presented our paper entitled “Towards Safe, Explainable, and Regulated Autonomous Driving” at the workshop in Vancouver, Canada.
- **[Poster] AI4Society Reverse EXPO** Feb. 2022  
Presented a poster on ongoing research at the expo in Edmonton, Canada.
- **[Presentation] 2nd Annual Autonomous Systems Initiative Symposium** Jun. 2021  
Gave a talk on ongoing research at the symposium in Edmonton, Canada.
- **[Presentation] 1st Annual Autonomous Systems Initiative (ASI) Symposium** Oct. 2020  
Gave a talk on ongoing research at the symposium in Edmonton, Canada.

## TEACHING

**Course Instructor** Fall 2022  
Azerbaijan State Oil and Industry University (remote) Edmonton, Canada

- Taught the NLP 3101: Natural Language Processing course to the Master’s students remotely from Edmonton, Canada.

**Teaching Assistant** Winter 2022  
Department of Computing Science, University of Alberta Edmonton, Canada

- Prof. Osmar Zaiane and Sadaf Ahmed’s teaching assistant (TA) for CMPUT 174: Introduction to the Foundations of Computation I (>600 students).

**Teaching Assistant** Fall 2019  
Department of Computing Science, University of Alberta Edmonton, Canada

- Prof. Russell Greiner’s TA for the CMPUT 463/563: Probabilistic Graphical Models course, a senior undergrad./grad. level course consisting of 34 students.

## HONORS & AWARDS

- **Jan. 2024:** Graduate Student Travel Award for academic travel to the Massachusetts Institute of Technology (a one-time payment award)
- **Nov. 2023:** The Alberta Graduate Excellence Scholarship (AGES) for outstanding achievements in doctoral study (a one-time payment award)
- **Feb. 2022:** AAAI-2022 Conference Scholarship (a one-time payment award)
- **May 2020:** Huawei’s Doctoral Research Funding (May 2020 - Apr. 2024)
- **May 2020:** Doctoral Scholarship by the Ministry of Science and Education of the Republic of Azerbaijan (May 2020 - Oct. 2023)
- **Mar. 2019:** Doctoral Funding by the Department of Computing Science of the University of Alberta (Sep. 2019 - Apr. 2023)
- **Sep. 2015:** Master’s Scholarship by the Ministry of Science and Education of the Republic of Azerbaijan (Jan. 2016 - Jan. 2018)

## ACADEMIC SERVICE

**Reviewer** Mar. 2020 - Present  
Department of Computing Science, University of Alberta Edmonton, Canada

- Reviewed papers for the JMLR, JAIR, and AIRE journals; IEEE ITSC Conference (2022, 2023), IEEE IV Conference (2022), and AAAI-2024 Conference.

**Publicity Director** May 2022 - Aug. 2022  
Department of Computing Science, University of Alberta Edmonton, Canada

- Promoted various academic events to the students and the department as a Publicity Director of the Computing Science Graduate Students’ Association.

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Last updated on Jan. 30, 2024.