

# BEHZAD SHAYEGH BOROUJENI

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## Education

<i>Present</i>	<b>M.Sc. in Computing Science</b>
<i>Sep. 2022</i>	Department of Computing Science, University of Alberta Supervisor: Lili Mou Thesis: GPA: 4/4
<i>Aug. 2022</i>	<b>B.Sc. in Computer Engineering</b>
<i>Sep. 2017</i>	Department of Electrical and Computer Engineering, University of Tehran Sub-specialization: Software Engineering Supervisor: Mohammad Amin Sadeghi Thesis: Locating Street Addresses from Informal Persian Texts using IDF-Adapted Kernel-Based Hierarchical Bayesian Models - GPA: 18.21/20
<i>Aug. 2022</i>	<b>Minor B.Sc. in Computer Science</b>
<i>Feb. 2020</i>	Department of Mathematics, Statistics and Computer Science, University of Tehran

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## Professional Experience

<i>Present</i>	<b>Research (Mitacs) Intern</b>
<i>Sep. 2023</i>	Borealis AI, Canada Academic Supervisor: Lili Mou
<i>Present</i>	<b>Graduate Research Assistant</b>
<i>Sep. 2022</i>	Department of Computing Science, University of Alberta Supervisor: Lili Mou - A Zero-Shot Knowledge Transfer Framework for Supervised and Unsupervised Chunkers: From High-Resource Languages to Other Languages - Meta-Learning as a Bridge Between Languages: Transferring Natural Language Syntax Supervision in an Unsupervised Manner - Revolutionizing Unsupervised Constituency Parsing: A Cutting-Edge Ensemble and Distillation Approach Incorporating the Latest Parsers
<i>Jul. 2022</i>	<b>Data Scientist</b>
<i>Feb. 2022</i>	Divar (The Most Popular Iranian Classified Ads Platform), Tehran, Iran - Wideness-Ratio: A Dynamic Interval Estimation Metric Based on Real-World Data Variability - Fast Yet Effective Dynamic Car Price Interval Estimation - Estimating an Unknown Number of Effective Categorical Features using Gaussian Mixture Models - Outlier Detection using Statistical Approaches

Sep. 2021 Jul. 2020	<b>Undergraduate Research Assistant</b> Department of Electrical and Computer Engineering, University of Tehran Supervisor: Mohammad Amin Sadeghi - Locating Street Addresses from Informal Persian Texts using IDF-Adapted Kernel-Based Hierarchical Bayesian Models
Jun. 2020 Jun. 2019	<b>Research Intern</b> 4-Choob (Real Estate Listing Platform), Tehran, Iran Academic Supervisor: Mohammad Amin Sadeghi - Real State Price Estimation Robust to Price Index Fluctuations

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## Teaching Experience

Sep. 2023 Aug. 2023	<b>Research Mentor</b> Computing Research Association (CRA) - Undergraduate Research to Ph.D. (UR2PhD)
Sep. 2023 Aug. 2023	<b>Content Development Support</b> Alberta Machine Intelligence Institute (AMII) - Applied Ethics in AI (Labs)
Aug. 2023 May. 2023	<b>Volunteer Assistant Instructor</b> Department of Computing Science, University of Alberta - Computing Science High School Internship Program (HIP)
Apr. 2023 Sep. 2022	<b>Teaching Assistant</b> Department of Computing Science, University of Alberta - Introduction to the Foundations of Computation II (Fall & Winter 2022)
Jan. 2022 Feb. 2020	<b>Head Teaching Assistant</b> Department of Electrical and Computer Engineering, University of Tehran - Engineering Probability and Statistics (Fall 2021) Instructed by Behnam Bahrak <ul style="list-style-type: none"> <li>• <i>Provided supplementary content named Applied Statistics in R</i></li> </ul> - Discrete Mathematics (Spring & Fall 2020) Instructed by Siamak Mohammadi <ul style="list-style-type: none"> <li>• <i>Supplied supporting materials called Common Mistakes in Discrete Mathematics</i></li> </ul>
Jan. 2022 Feb. 2018	<b>Volunteer Teaching Assistant</b> Department of Electrical and Computer Engineering, University of Tehran - Foundation Models in Natural Language Processing (Fall 2021) - Natural Language Processing (Spring 2021) - Discrete Mathematics (Spring & Fall 2019 & Spring 2021) - Artificial Intelligence (Spring 2020) - Engineering Probability and Statistics (Fall 2019) - Data Structures and Algorithms (Fall 2019) - Introduction to Computing Systems and Programming (Fall 2019) - Engineering Computer Programming (Spring & Fall 2018)
Apr. 2020	<b>Assistant Instructor</b> Scientific Association of Physics and Astronomy, Amirkabir University of Technology - Introduction to Python and Data Science (Workshop) <ul style="list-style-type: none"> <li>• <i>Provided an exercise-based tutorial on Python From Scratch</i></li> </ul>

<i>Jan. 2020</i>	<b>Assistant Instructor</b> Tehran Institute for Advanced Studies (TeIAS), Khatam University - Data Science Winter School (Workshop)
<i>Dec. 2019</i>	<b>Assistant Instructor</b> IEEE Student Branch, University of Tehran - Data Science Winter School (Workshop)
<i>Sep. 2019</i> <i>Jul. 2019</i>	<b>Workshop Instructor</b> ACM Student Chapter, University of Tehran - Summer of Code for Artificial Intelligence

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## Open Access Educational Materials

Shayegh, B., MohammadHashemi, S., MohammadTaheri, K., Mohammadi, S. (2021). **Discrete Mathematics: An Introduction with an Academic Approach**.  
<https://github.com/OpenBookshelf/DiscreteMathematics-Persian/>

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## Presentations and Talks

Shauegh, B. (Aug. 2023). **Unsupervised Parsing with Deep Inside-Outside Recursive Autoencoders (DIORA)**. NLP group seminar, University of Alberta.

Shauegh, B. (Aug. 2023). **Supervised and Unsupervised Recurrent Neural Network Grammars (RNNG)**. NLP group seminar, University of Alberta.

Shauegh, B. (Apr. 2023). **Mixture of Experts**. NLP group seminar, University of Alberta.

Shauegh, B. (Mar. 2023). **Learn to Teach: Knowledge Distillation with Meta Learning**. NLP group seminar, University of Alberta.

Shauegh, B., Mahmoudi, H. (Nov. 2022). **Car Price Estimation**. Data Science Chapter, Divar, Tehran, Iran.

Shauegh, B., Sadeghi, MA. (Aug. 2021). **Locating Street Addresses from Informal Persian Texts using IDF-Adapted Kernel-Based Hierarchical Bayesian Models**. Thesis defense, the 12th day of the project, School of Electrical and Computer Engineering, University of Tehran.

Shauegh, B. (Jul. 2021). **Everything about Text Processing in Computational Neuroscience**. Computational Neuroscience Course, School of Mathematics, Statistics and Computer Science, University of Tehran.

Kamkar, Y., Shauegh, B. (Winter 2020). **How to Write Proofs**. Discrete Mathematics, School of Electrical and Computer Engineering, University of Tehran.

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## Open Source Contribution

<i>Jun. 2021</i>	<b>Spiral</b>
<i>Mar. 2021</i>	A Python Spiking Neural Network framework on top of PyTorch for Computational Neuroscience needs

May. 2021 | **Persian Educational Book  $\LaTeX$  Template**  
Feb. 2021 | Built on top of XePersian package

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## Awards and Grants

- Department Recruitment Scholarship (5k CAD)
  - Bachelor Entrance Scholarships (Full tuition waiver)
  - Minor Bachelor Kahad Scholarship (Full tuition waiver)
  - Gaaj's Konkour Scholarship (Full three-years preparation tuition waiver)
  - Ghalamchi's Konkour Scholarship (Full one-year preparation tuition waiver)
    - *Konkour is the Iranian National University Entrance Exam*
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## Notable Skills

**Programming and Script Languages:** Python [Expert], R, C/C++, SQL, Bash

**Python Tools:** PyTorch [Proficient], Tensorflow, Keras, Numpy [Expert], Pandas [Expert], NLTK, Scikit-Learn, SciPy, Matplotlib, Seaborn

**Other Softwares:** Git,  $\LaTeX$  [Proficient], DVC, Spreadsheet/Excel [Excpert], Jupyter/Colab

**Languages:** English [Proficient], Persian [Native]