

BEHZAD SHAYEGH BOROUJENI

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Education

<i>Present</i> <i>Sep. 2022</i>	M.Sc. in Computing Science Department of Computing Science, University of Alberta Supervisor: Lili Mou GPA: 4/4
<i>Aug. 2022</i> <i>Sep. 2017</i>	B.Sc. in Computer Engineering 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> <i>Feb. 2020</i>	Minor B.Sc. in Computer Science Department of Mathematics, Statistics and Computer Science, University of Tehran GPA: 17.16/20

Publications

Shayegh, B., Cao, Y., Zhu, X., Cheung, J. C.K., Mou, L. (Oct. 2023). **Ensemble Distillation for Unsupervised Constituency Parsing**. arXiv preprint arXiv:2310.01717.

Professional Experience

<i>Present</i> <i>Sep. 2023</i>	Research (Mitacs) Intern Borealis AI, Canada Academic Supervisor: Lili Mou <ul style="list-style-type: none">- Ensemble Distillation for Unsupervised Constituency Parsing [Submitted to ICLR]- Ensemble Discontinuous Constituency Parsing [Under preparation]- Ensemble Dependency Parsing [Ongoing]
<i>Sep. 2023</i> <i>May. 2023</i>	Graduate Research Assistant Department of Computing Science, University of Alberta Supervisor: Lili Mou <ul style="list-style-type: none">- 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

Jul. 2022	Data Scientist
Feb. 2022	Divar (The Most Popular Iranian Classified Ads Platform), Tehran, Iran <ul style="list-style-type: none"> - Wideness-Ratio: A Dynamic Interval-Estimation Metric Based on True Elasticity - Fast Yet Effective Dynamic Interval Estimation for Used-Car Prices - Estimating an Unknown Number of Effective Categorical Features using Gaussian Mixture Models and Goodness of Fit - Outlier Detection using Statistical Approaches
Sep. 2021	Undergraduate Research Assistant
Jul. 2020	Department of Electrical and Computer Engineering, University of Tehran <p>Supervisor: Mohammad Amin Sadeghi</p> <ul style="list-style-type: none"> - Locating Street Addresses from Informal Persian Texts using IDF-Adapted Kernel-Based Hierarchical Bayesian Models
Jun. 2020	Research Intern
Jun. 2019	4-Choob (Real Estate Listing Platform), Tehran, Iran <p>Academic Supervisor: Mohammad Amin Sadeghi</p> <ul style="list-style-type: none"> - Real-Estate Price Estimation Robust to Price-Index Fluctuations

Teaching Experience

Jan. 2023	Volunteer Teaching Assistant
Apr. 2024	Department of Electrical and Computer Engineering, University of Tehran <ul style="list-style-type: none"> - Intermediate Machine Learning
Sep. 2023	Research Mentor
Aug. 2023	Computing Research Association (CRA) <ul style="list-style-type: none"> - Undergraduate Research to Ph.D. (UR2PhD)
Sep. 2023	Content Development Support
Aug. 2023	Alberta Machine Intelligence Institute (AMII) <ul style="list-style-type: none"> - Applied Ethics in AI (Labs)
Aug. 2023	Volunteer Assistant Instructor
May. 2023	Department of Computing Science, University of Alberta <ul style="list-style-type: none"> - Computing Science High School Internship Program (HIP)
Apr. 2023	Teaching Assistant
Sep. 2022	Department of Computing Science, University of Alberta <ul style="list-style-type: none"> - Introduction to the Foundations of Computation II (Fall & Winter 2022)
Jan. 2022	Head Teaching Assistant
Feb. 2020	Department of Electrical and Computer Engineering, University of Tehran <ul style="list-style-type: none"> - Engineering Probability and Statistics (Fall 2021) Instructed by Behnam Bahrak <ul style="list-style-type: none"> • <i>Provided supplementary content named Applied Statistics in R</i> - Discrete Mathematics (Spring & Fall 2020) Instructed by Siamak Mohammadi <ul style="list-style-type: none"> • <i>Supplied supporting materials called Common Mistakes in Discrete Mathematics</i>

Jan. 2022	Volunteer Teaching Assistant
Feb. 2018	Department of Electrical and Computer Engineering, University of Tehran <ul style="list-style-type: none"> - 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	Assistant Instructor Scientific Association of Physics and Astronomy, Amirkabir University of Technology <ul style="list-style-type: none"> - Introduction to Python and Data Science (Workshop) <ul style="list-style-type: none"> • <i>Provided an exercise-based tutorial on Python From Scratch</i>
Jan. 2020	Assistant Instructor Tehran Institute for Advanced Studies (TeIAS), Khatam University <ul style="list-style-type: none"> - Data Science Winter School (Workshop)
Dec. 2019	Assistant Instructor IEEE Student Branch, University of Tehran <ul style="list-style-type: none"> - Data Science Winter School (Workshop)
Sep. 2019	Workshop Instructor
Jul. 2019	ACM Student Chapter, University of Tehran <ul style="list-style-type: none"> - Summer of Code for Artificial Intelligence

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/>

Presentations, Lectures, and Talks

Shayegh, B. (Oct. 2023). **Ensemble Distillation for Unsupervised Constituency Parsing**. NLP group seminar, University of Alberta.

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

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

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

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

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

Shayegh, 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.

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

Open Source Contribution

Jun. 2021	Spiral
Mar. 2021	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

Awards and Grants

- Department Recruitment Scholarship (5k CAD)
- Minor Bachelor Kahad Scholarship (Full tuition waiver)
- Bachelor Entrance Scholarships (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*

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]