

SABER GHOLAMI

Curriculum Vitae (C.V.)

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www.sabergh.com

RESEARCH INTERESTS

- ◇ Deep learning in Graphs, Reinforcement Learning in Graphs
- ◇ Modeling and Analysis of Large Complex and Social Networks
- ◇ Algorithm design and Data structure
- ◇ Message dissemination, Broadcasting, Networks

EDUCATION

- ◇ **Ph.D in Computer Science** Sept. 2019 – Nov. 2022
Concordia University, Montreal, Canada GPA: 4.2/4.3
Research area: ML for graphs, Social networks analysis, Algorithm design, Broadcasting, Networks, and Graph theory.
- ◇ **M.Sc in Computer Engineering** Sept. 2017 – Sept. 2019
Amirkabir. University of Technology, Tehran, Iran GPA: 17.83/20
Research area: Machine Learning, Learning automata, Complex networks, Graph coloring, Influence maximization, and Natural language processing.

WORK EXPERIENCE

- ◇ **Research Assistant** Sept. 2019 - Nov. 2022
Networks and Complexity Lab, Concordia University, Montreal, CA
Projects: Developed a novel Genetic Algorithm framework for fast message dissemination in networks with limited memory in Python. Designed the optimal algorithm for broadcasting in various communication networks. Developed a fast algorithm for community detection in social networks based on centrality measures. Suggested a memory-efficient model for communication in graphs.
- ◇ **Research Assistant** Jan. 2018 - July 2019
Soft Computing Lab, Amirkabir University, Tehran, IR
Projects: Developed a novel hybrid learning model based on learning automata with applications in the dropout phase of Neural Networks in Python. Developed a fast algorithm for influence maximization in social networks based on graph coloring in Python. Developed various ML and NLP algorithms for classifying Google Play applications in Python.
- ◇ **Junior Software Engineer** Sept. 2015 - Aug. 2016
Virtual Reality Lab, K.N.Toosi University, Tehran, IR
Projects: Developed a Java framework for optimizing the movement of virtual cars in curved highways and bridges using Bezier curve fitting methods.

PUBLICATIONS

- ◇ Journal papers:
 - **Gholami, Saber** and Hovhannes A. Harutyunyan. “A Note to Non-adaptive Broadcasting.” *Parallel Processing Letters* (2022) (*Under Reveiw*).
 - **Gholami, Saber** and Hovhannes A. Harutyunyan. “HUB-GA: A Heuristic for Universal lists Broadcasting using Genetic Algorithm.” *Journal of Communications and Networks* (2023).
 - **Gholami, Saber**, Hovhannes A. Harutyunyan, and Edward Maraachlian. “Optimal Broadcasting in Fully Connected Trees.” *Journal of Interconnection Networks* (2022): 2150037.
 - **Gholami, Saber**, Ali Mohammad Saghiri, S. M. Vahidipour, and M. R. Meybodi. “HLA: a novel hybrid model based on fixed structure and variable structure learning automata.” *Journal of Experimental Theoretical Artificial Intelligence* (2021): 1-26.
- ◇ Conference papers:
 - **Saber Gholami**, and Hovhannes A. Harutyunyan. “Fully-adaptive Model for Broadcasting with Universal Lists.” In *24th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, 2022.

- **Saber Gholami**, and Hovhannes A. Harutyunyan. “Broadcast Graphs with Nodes of Limited Memory.” In *Complex Networks XIII*, pp. 29-42. Springer, Cham, 2022.
- **Saber Gholami**, and Hovhannes A. Harutyunyan. “A Broadcasting Heuristic for Hypercube of Trees.” In *2021 IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC)*, pp. 0355-0361. IEEE, 2021.
- Bakhtar, Sahar, **Saber Gholami**, and Hovhannes A. Harutyunyan. “A new metric to evaluate communities in social networks using geodesic distance.” In *International Conference on Computational Data and Social Networks (CSoNet)*, pp. 202-216. Springer, Cham, 2020.
- Mohammad Ebrahimi, A., **Saber Gholami**, Saeedeh Momtazi, M. R. Meybodi, and A. Abdollahzadeh Barforoush. “Correlation Analysis of Applications’ Features: A Case Study on Google Play.” In *The 7th International Conference on Contemporary Issues in Data Science*, pp. 202-216. Springer, Cham, 2019.

TEACHING
EXPERIENCE

- ◇ **Part-time Lecturer at John Abbott College, Montreal, Canada**
 - Foundations of Web Development Apr. - May 2022
- ◇ **Teaching Assistant at Concordia University, Montreal, Canada**
 - COMP 352: Data Structure and Algorithms Winter 21, Summer 21, Winter 22
Instructors: P.Eng. Nora Houari and Dr. Tiberiu Popa
 - COMP 248: Object-Oriented Programming I Fall 21, Fall 22
Instructor: P.Eng. Nora Houari
 - COMP 335: Intro to Theoretical Computer Science Fall 20, Fall 21, Winter 22, Fall 22
Instructors: Prof. L. Narayanan and Dr. Denis Pankratov
 - SOEN 331: Formal Methods for Software Engineering Winter 20, Winter 21, Fall 21
Instructors: P.Eng. C. Constantinides and Dr. A. Jannatpour
 - COMP 354: Software Engineering Fall 20
Instructor: P.Eng. C. Constantinides
 - SOEN 6461: Software Design Methodologies Fall 21
Instructor: P.Eng. C. Constantinides
- ◇ **Teaching Assistant at Amirkabir University of Technology, Tehran, Iran**
 - Algorithm design Winter 18
Instructor: Prof. A.R. Bagheri
 - Data structure Fall 18
Instructor: Prof. A.R. Bagheri
- ◇ **Teaching Assistant at K.N.Toosi University of Technology, Tehran, Iran**
 - Algorithm design Fall 15
Instructor: Prof. A. Nikanjam
 - Automata theory, languages, and computation Spring 15
Instructor: Prof. B. Nasersharif
 - Logic circuit Spring 14
Instructor: Prof. N. Manavizadeh

HONORS AND
AWARDS

- ◇ **Concordia International Tuition Award of Excellence** Jan. 2020
Valued at \$40k for 3 years (2020-2022).
- ◇ **Gina Cody Scholarship** Sept. 2019
Valued at \$60k for 3 years (2019-2021).
- ◇ **International Students Award of Excellence** Sept. 2019
Valued at \$52.5k for 3 years (2019-2021).

ACADEMIC
SERVICES

◇ **Reviewer for International Journals**

- Theoretical Computer Science
- Discrete Applied Mathematics
- The Journal of Supercomputing
- International Journal of Electrical Power & Energy Systems
- Journal of Experimental and Theoretical Artificial Intelligence

SKILLS

- ◇ Programming Languages: Python, Java, Prolog
- ◇ Machine Learning and Deep Learning: Scikit-learn, NumPy, SciPy, Pandas, Tensorflow, Keras, Spektral
- ◇ Web technologies, Front end: HTML, CSS, Bootstrap, Javascript, jQuery
- ◇ Web technologies, Back end: Django
- ◇ Social Networks and Graph Technologies: Networkx, Gephi
- ◇ NLP technologies: Nltk
- ◇ Production tools: Agile, Jira, Git
- ◇ Operating Systems: Windows
- ◇ Document Preparation: L^AT_EX, O365

REFERENCES

- ◇ **Prof. Hovhannes A. Harutyunyan**
Department of Computer Science and Software Engineering
Concordia University, Montreal, Canada
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EMAIL: haruty@cs.concordia.ca