Curriculum Vitae (C.V.)

Mohammad Saber Gholami

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Research Interests

- ◇ Algorithmic Graph Theory
- ◇ Modeling and Analysis of Large Complex and Social Networks
- ◇ Recommender Systems

Education

- ◇ **Ph.D student in Computer Science** — Sept. 2019 – Present
  Department of Computer Science and Software Engineering — **GPA: 4.2/4.3**
  Concordia University, Montreal, Canada
  Supervisor: Prof. Hovhannes A. Harutyunyan
  Thesis title: TBD
- ◇ **M.Sc Degree in Computer Engineering** — Sept. 2017 – Sept. 2019
  Department of Computer Engineering — **GPA: 17.83/20**
  Amirkabir. University of Technology, Tehran, Iran
  Supervisor: Prof. Mohammad Reza Meybodi
  Thesis title: Influence Maximization in Complex Networks Using Graph Coloring
- ◇ **B.Sc Degree in Computer Engineering** — Sept. 2012 – Sept. 2016
  Department of Computer Engineering — **GPA: 16.13/20**
  K.N.Toosi. University of Technology, Tehran, Iran
  Supervisor: Prof. Amin Nikanjam
  Thesis title: Implementation of 3D Bezier Curves to Move Virtual Cars in Driving Simulator
- ◇ **High School Diploma in Mathematics and Physics** — Sept. 2008 – June 2012
  Moallem Highschool, Tehran, Iran — **GPA: 19/20.00**

Honors and Awards

- ◇ **Concordia International Tuition Award of Excellence** — Jan. 2020
  Valued at $40k for 3 years (2020-2023).
- ◇ **Gina Cody Scholarship** — Sept. 2019
  Valued at $20k per year for 3 years (2019-2021).
- ◇ **International Students Award of Excellence** — Sept. 2019
  Valued at $17.5k per year for 3 years (2019-2021).
- ◇ **Ranked top 10** — Sept. 2019
  In class of 2018 among more than 25 software engineering master students.
- ◇ **Ranked top 10** — Sept. 2017
  In class of 2016 among more than 40 software engineering bachelor students.
- ◇ **Ranked 109** — Jan. 2017
  In the nationwide universities entrance exam for master's degree in software engineering among more than 30000 participants in Iran.
- ◇ **Ranked 2144** — Sept. 2012
  In the nationwide universities entrance exam among more than 260000 participants in Iran.

Publications

- ◇ **Saber Gholami** and H. A. Harutyunyan. "Optimal broadcasting in fully connected trees." *Submitted to Networks*, 2021.
- ◇ **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*, pp. 202-216. Springer, Cham, 2020.

◇ Ebrahimi, A. Mohammad, **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.

◇ **Saber Gholami**, A.M.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 and Theoretical Artificial Intelligence, 2019 *(Under Review)*

Academic Services

◇ Reviewer for International Journals

· The Journal of Supercomputing

· International Journal of Electrical Power & Energy Systems

Teaching Experience

◇ **Teaching Assistant**

Concordia University, Montreal, Canada

· COMP 352: Data Structure and Algorithms — Jan. - Apr. 2021
Instructor: P.Eng. Nora Houari

· SOEN 331: Introduction to formal methods for software engineering — Jan. - Apr. 2021
Instructor: P.Eng. P.Eng. C. Constantinides

· COMP 335: Introduction to Theoretical Computer Science — Sept. - Dec. 2020
Instructor: Prof. L. Narayanan

· COMP 354: Software Engineering — Sept. - Dec. 2020
Instructor: P.Eng. C. Constantinides

· SOEN 331: Intro to Formal Methods for Software Engineering — Jan. - Apr. 2020
Instructor: Dr. A. Jannatpour

Amirkabir University of Technology, Tehran, Iran

· Algorithm design — Jan. - May 2018
Instructor: Prof. A.R. Bagheri

· Data structure — Sept. - Dec. 2018
Instructor: Prof. A.R. Bagheri

K.N.Toosi University of Technology, Tehran, Iran

· Algorithm design — Fall 2015
Instructor: Prof. A. Nikanjam

· Automata theory, languages and computation — Spring 2015
Instructor: Prof. B. Nasersharif

· Logic circuit — Spring 2014
Instructor: Prof. N. Manavizadeh

Research Experience

◇ **Graph Theory**, Concordia University
Supervisor: Hovhannes A. Harutyunyan — Sept. 2019 – Present
Working on diverse topics which includes, but is not limited to: Graph theory, Broadcasting, Broadcasting with Universal Lists, Genetic Algorithm, Social Networks, and Community Detection.

◇ **Machine Learning**, Amirkabir University of Technology
Supervisor: Ali.M. Saghiri — Mar. 2019 – Sept. 2019
Implementation of distributed Learning Automata in order to find the best features in a clustering application like text categorization.

- **Influence Maximization in Social Networks**, Amirkabir University of Technology
  SUPERVISOR: Prof. M. Amir Haeri — Dec. 2017 – Aug. 2018
- **Influence Maximization in Complex Networks using Graph Coloring**, Soft Computing Lab, Amirkabir University of Technology
  SUPERVISOR: Prof. M. Meybodi — Jan. 2017 – Sept. 2019
- **Natural Language Processing**, Amirkabir University of Technology
  SUPERVISOR: Prof. S. Momtazi — Dec. 2017 – Aug. 2018
  Classifying Google play applications with various techniques.
- **Information Retrieval**, Amirkabir University of Technology
  SUPERVISOR: Prof. S. Momtazi — Sept. 2018 – Dec. 2018
- **Research Assistant in Virtual Reality Lab**, K.N.Toosi University of Technology
  SUPERVISOR: Prof. A. Nikanjam — Sept. 2015 – Aug. 2016
  Working on implementation of a 3D curve fitting model for simulating cars activities in VR Lab.

Related Courses

- **Concordia University**
  Introduction to Artificial Intelligence (A), Algorithm Design and Techniques (A^+), Combinatorial Algorithms (A^+)
- **Amirkabir University of Technology**
  Algorithms for Complex Network (17.15/20), Analysis Design of Algorithms (18.5/20), Statistical Natural Language Processing (18.03/20), Advanced Data Bases (20/20), Requirements Engineering (17.75/20), Seminar (19/20), Project (19.5/20).
- **K.N.Toosi University of Technology**
  Advanced programming in Java (20/20), Discrete structures (16/20), Statistics and Probability (17.3/20), Logic circuits (20/20), Automata theory, languages and computation (18.75/20), Seminar (18.5/20), Algorithm design (18.3/20), Database design (19.72/20), System analysis and design (18.5/20), Operating systems (16.7/20), Introduction to cryptography (17/20), Compiler Design (18.75/20), Modern information retrieval (18/20), Multimedia Systems (16/20), Thesis (20/20)

Other Academic Projects

- **Feature selection algorithm with LA** A feature selection algorithm with respect to Learning Automata with practical usage in Natural Language Processing, with Python, 2019.
- **IIS+** A Coloring-based algorithm for influence maximization in complex networks, with Python, 2019.
- **Implementation of an influence maximization algorithm** Implementation both IM algorithm and spread model (IC) in python, 2018.
- **Page rank and HITS algorithm implementation** Implementation of Page rank and HITS algorithms in python, 2018.
- **Recommender System** Implementation of both item-based and user-based recommender systems in Python, 2018.
- **Retrieval System** Implementation of a query retrieval system using TF-IDF matrix in Python, 2018.
- **Mobile Application Classification** Classification of Google play application, using various classifiers in Python, 2018.
- **Web Crawler** Implementation of a Google play crawler in python, 2018.
- **Context-dependent polarity disambiguation** Word sense disambiguation using Naive Bayes and SVM classifier in Python, 2018.
- **POS tagging, NER** Part Of Speech tagging with hidden Markov model, Name Entity Recognition in Python, 2018.
- **Feature selection algorithms implementation** Implementation of 3 feature selection algorithms (Chi-Square, Mutual Information, Information Gain) in Python, 2018.
- **Requirement engineering** An online book store system, requirement engineering phase, 2017.

◇ **Implementation of a bezier curve fitting algorithm** Implementation of a 3D curve fitting algorithm for moving virtual cars, 2016.

Skills

◇ Programming Languages: Python, Java, C, C++, Prolog

◇ Machine Learning: Scikit-learn, NumPy, SciPy

◇ Social Networks and Graph Technologies: Networkx, Gephi

◇ NLP technologies: Nltk

◇ Operating Systems: Windows, Linux(Ubuntu)

◇ Web Technologies: HTML, CSS, Javascript, JQuery, Bootstrap

◇ Document Preparation: LaTeX, Microsoft word

Languages

◇ Persian (native)

◇ English (fluent), IELTS (Overall band score: 7)(W:6.5 — S:7 — L:7 — R:7.5)

References

◇ **Prof. Hovhannes A. Harutyunyan**
Department of Computer Science and Software Engineering
Concordia University, Montreal, Canada
Website: https://users.encs.concordia.ca/ haruty/
Email: haruty@cs.concordia.ca

◇ **Prof. Saeedeh Momtazi**
Department of Computer Engineering
Amirkabir University of Technology, Tehran, Iran
Website: http://ceit.aut.ac.ir/ momtazi/
Email: momtazi@aut.ac.ir

◇ **Prof. Alireza Bagheri**
Department of Computer Engineering
Amirkabir University of Technology, Tehran, Iran
Website: http://ceit.aut.ac.ir/ bagheri/
Email: ar_bagheri@aut.ac.ir