Maram Assi

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Education

Queen's University	*Kingston, ON, Canada*
Ph.D. in Computing	**2019 - now**

- Advisor: Prof. Ying Zou
- Awarded Government of Canada Vanier Graduate Scholarship $150K (ranked 15/190 nationwide), CGPA 4.2/4.3
- Research interest: Software Engineering, Software Analytics, Software Evolution, Data Mining and Machine Learning

Lebanese American University	*Beirut, Lebanon*
M.S in Computer Science (CGPA 3.6/4)	**2014 - 2017**
B.S. in Computer Science (CGPA 3.9/4)	**2010 - 2014**

Research Experience

Queen's University	*Kingston, ON, Canada*
Graduate Research Assistant	**2019 - now**

- Designed and implemented a novel approach, FeatCompare, to automatically mine and compare opinions from user reviews, leveraging Machine Learning and Natural Language Processing to help developers improve the features of their mobile applications
- Leveraged machine learning models to help developers predict the defect fixing effort by including new features identified using a state-of-the-art Topic Modelling; achieved a 78% precision and 45% recall improvement
- Analyzed the evolution of clones and defects in Deep Learning frameworks by identifying the time series trends

Lebanese American University	*Beirut, Lebanon*
Graduate Research Assistant	**2014 - 2017**

- Designed a GA algorithm to schedule household appliances (i.e., smart grids) to reduce monetary expenses by leveraging the Time of Use price model
- Designed a solution using Genetic Algorithm (GA) and graph colouring method to solve the university course scheduling problem
- Proposed SDODV, a new smart and dynamic on-demand distance vector routing protocol for mobile ad hoc networks that leverages traditional Ad hoc On-Demand Distance Vector (AODV) and distributed reinforcement learning approach to increase the lifetime of a network by reducing energy consumption

Honors & Awards

2023	**ACM-W Scholarship Award**, recipient	ACM Association
2023	**SIGSOFT grant to attend ICSE 2023**, recipient	ACM Association
2023	**Three-minute Thesis Competition**, finalist (2nd place)	Queen's University
2022	**School of Computing Ian A. Macleod Award**, recipient	Queen's University
2022	**Travel Grant Award to attend ICSE 2022**, recipient	ACM Association
2021	**SGPS International Student Leader Award**, recipient	Queen's University
2021	**SGS Award in Leadership, Innovation, and Community Engagement**, recipient	Queen's University
2021 - 2024	**Vanier Graduate Canada Scholarship, NSERC**, recipient	Government of Canada
2021	**Graduate Research Fellowship**, recipient	Queen's University
2014	**Graduate Merit Scholarship for Outstanding Students**, recipient	Lebanese American University
2011	**Honor Scholarship Award for undergraduate students**, recipient	Lebanese American University
2010	**Entrance Scholarship for new students**, recipient	Lebanese American University
2003 - 2009	**PepsiCo International's Tomooh Scholarship for school students**, recipient	PepsiCo International

Professional Experience

Faculty of Engineering and Applied Science, Queen's University   *Kingston, ON, Canada*
Web Specialist   **2019 - 2021**
- Implemented and maintained websites for the FEAS using the Cascade and WordPress platforms
- Redesigned the FEAS website, which led to increased user interaction and a reduction of the web technical issues

Acteos Production SAL Offshore   *Beirut, Lebanon*
Software Analyst and Senior Software Developer (Supply Chain Management Domain)   **2016 - 2019**
- Implemented a transport planning program that reduced the transport cost for French retailers by 30% (E. Leclerc)
- Optimized the load and itinerary algorithm in terms of distance and time, which reduced the transport flow by 20%+
- Designed and implemented an interface for the transport management system to mobile applications using Oracle PL/SQL that led to real-time tour progression monitoring

Capital Banking Solutions SAL Offshore   *Beirut, Lebanon*
Software Developer (Banking Domain)   **2014 - 2016**
- Developed the client database, external and internal transfer modules using Oracle ADF framework and SQL Database
- Collaborated with product managers to restructure the user management module to meet customer needs, which led to an optimized user search and an enhanced user creation workflow

Teaching Experience

Queen's University   *Kingston, ON, Canada*
Teaching Fellow (co-instructor)   **2022 - now**
- Lecturing the Elements of Computing with Data Analytics to 500+ undergraduate students
- Preparing the weekly active learning activities

Enrichment Studies Unit Instructor   **2020 - 2022**
- Created Introduction to Web Development (Grades 7 - 8) and Introduction to Web Development (Grades 10-12) courses
- Delivered 5 hands-on online courses to a group of 15-20 Grade 7-8 and Grade 10-12 students

Teaching Assistant   **2019 - 2022**
- Marked assignments and exams for the Elements of Computing Science undergraduate course (Fall 2021)
- Marked assignments and exams for Computer Networks undergraduate course (Winter 2021)
- Designed, prepared and delivered lab material for the Elements of Data Analytics undergraduate course (Winter 2020)
- Marked assignments, final projects and exams for the Topics in Data Analytics graduate course (Fall 2020)
- Delivered lab material, marked quizzes and exams for Fundamentals of Web Development undergraduate course (Fall 2019)

Lebanese American University   *Beirut, Lebanon*
Lecturer   **2014 - 2016**
- Prepared class material and delivered class lectures for the Computer Applications undergraduate course (Fall 2014 and Spring 2015)

Teaching Assistant   **2014 - 2016**
- Designed and delivered lab hands-on tutorials and assignments for Intro to Object-Oriented Programming (Java) and Object and Data Abstraction (Java) undergraduate courses

Publications

JOURNAL PAPERS
[9] Unraveling Code Clone Dynamics in Deep Learning Frameworks
(in preparation – to be submitted to ACM Transactions on Software Engineering and Methodology)
Assi M., Hassan S., Zou Y.

[8] Predicting the Change Impact of Resolving Defects by Leveraging the Topics of Issue Reports in Open Source Software Systems
ACM Transactions on Software Engineering and Methodology, 2023
Assi M., Hassan S., Georgiou S., Zou Y.

[7] SDODV: A smart and adaptive on-demand distance vector routing protocol for MANETs
Peer-to-Peer Networking and Applications, 2023
Kaddoura S., Haraty R., Al Jahdal S, **Assi M.**

[6] FeatCompare: Feature Comparison for Competing Mobile Apps Leveraging User Reviews
Empirical Software Engineering, 2021
Assi M., Hassan S., Tian Y., Zou Y.

[5] DADL: A Deep Evolutionary Analysis of Deep Learning Frameworks
Assi M., Hassan S., Zou Y. *(in preparation)*

CONFERENCE PAPERS
[4] Scheduling Household Appliances using Genetic Algorithms
International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies, 2022
Assi M., Haraty R., Thoumi S., Kaddoura S., Belal N.

[3] A Survey of the Knapsack Problem
International Arab Conference on Information Technology, 2018
Assi M., Haraty R.

[2] Genetic Algorithm Analysis Using the Graph Coloring Method for Solving the University Timetable Problem
International Conference on Knowledge-Based and Intelligent Information & Engineering Systems, 2018
Assi M., Halawi B., Haraty

[1] A Systematic Review of Anonymous Communication Systems
International Conference on Enterprise Information Systems, 2017
Haraty R., **Assi M.**, Rahal I.

Presentations and Invited Talks

Oral presentation at Consortium for Software Engineering Research, McGill University, Montreal, Canada   **2023**
Predicting the Change Impact of Resolving Defects

Oral presentation at the 44th Internal Conference on Software Engineering, Pittsburgh, PA, USA   **2022**
FeatCompare: Feature Comparison for Competing Mobile Apps Leveraging User Reviews

Special guest at the ACM Canadian Celebration of Women in Computing, Toronto, Canada   **2022**
Women, Life, Freedom, Technology

Oral presentation at Consortium for Software Engineering Research, (virtual)   **2021**
FeatCompare: Feature Comparison for Competing Mobile Apps Leveraging User Reviews

Oral presentation at the International Conference on Intelligent Information Systems, Serbia, Belgrade   **2018**
Genetic algorithm analysis using the graph coloring method for solving the university timetable problem

Invited Keynote at the Lebanese University career panel, Beirut, Lebanon   **2019**
Artificial Intelligence for Supply Chain Management

Oral presentation at the International Arab Conference on Information Technology, Werdayneh, Lebanon   **2018**
A Survey of the Knapsack Problem

Oral presentation at the International Conference on Applied Research in Computer Science and Engineering,   **2017**
Beirut, Lebanon
Security Threats and Attacks on Tor

Leadership

Nationwide elected student board member, CS-Can |Info-Can   **2020 - now**
- Chairing the Student and Post-doc advisory committee (11 members)
- Developing engagement programs and activities fostering research for the Canadian computer science community at large
- Meeting with the board members and Canadian institutions' computing department chairs to foster the students and postdocs
- Preparing for the annual CS-CAN nationwide conference

Computing Department Steward, Teaching Fellow Union (PSAC 901)   **2020 - now**
- Handling grievances and advocating for the rights of student employees

President, Queens' Graduate Computing Society   **2020 - 2022**
- Oversaw the operations of the GCS Council (12 members) in its entirety and acted as a speaker at the school council meeting

Peer Facilitator, Queen's Human Rights and Equity Office   **2020 - 2021**
- Delivered training for 300+ student leaders about Equity, Diversity, and Inclusive Leadership

Mentor, Women in Engineering and Science (WiSE)   **2020 - 2021**
- Provided guidance and support to empower women in engineering and science, fostering their professional development and promoting gender diversity in STEM fields

Mentor, LAU Alumni Mentoring Program   **2018 - 2019**
- Offered advice and guidance related to senior students' career paths and overall professional development

Founder of the GRAD MENTOR PROGRAM, Queen's Faculty of Arts and Science   **2020**
- Founded a peer advisor program that supports future Queen's students navigating Kingston and Queen's resources

Academic Service

Invited Transaction Reviewer
IEEE Transaction on Software Engineering   **2022, 2023**

Conference Reviewer
IEEE/ACM International Conference on Software Engineering (ICSE)   **2024**
IEEE/ACM International Conference on Automated Software Engineering (ASE)   **2020, 2022**
ACM Mining Software Repositories (MSR)   **2022**
ACM Symposium on the Foundations of Software Engineering (FSE)   **2021, 2022, 2024**

Conference Organization
ACM Mining Software Repositories (MSR), session chair   **2023**
CS-Can |Info-Can student conference, organizer member   **2023**
ACM Canadian Celebration of Women in Computing, organizer member   **2022**
Queen's CSearch Computing Student Research Conference, program chair   **2020**

Skills

Programming Languages	Python, R, Java, Oracle SQL, PL/SQL
Web development	WordPress, HTML5, CSS3, JavaScript, PHP
Tools	Jira, SQL developer, GitHub, SVN, Oracle ADF, PLSQL developer
Languages	Full proficiency in English, French and Arabic