

Mahmoud M. Hammad*Assistant Professor*

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Mahmoud Hammad is an Assistant Professor in the [Software Engineering Department](#) within the [Computer and Information Technology School](#) at the [Jordan University of Science and Technology \(JUST\)](#). He is also the director of the [Center for E-Learning and Open Educational Resources](#). Hammad's research interests are in the field of software engineering and natural language processing, specifically in the area of software architecture, self-adaptive software systems, mobile computing, machine learning, and software security. Hammad received his Ph.D. in Software Engineering from the [University of California, Irvine \(UCI\)](#) under the supervision of [Prof. Sam Malek](#). During his Ph.D., Hammad developed [a self-protecting Android software system](#), an Android software system that can monitor itself and adapt (change) its behavior at runtime to keep the system secure and protected from Inter-Component Communication attacks at all times. Hammad received his M.S. in Software Engineering from [George Mason University, VA, USA](#) and B.S. in Computer Science from [Yarmouk University, Jordan](#). Hammad is a member of the [Association of Computing Machinery \(ACM\)](#), [ACM Special Interest Group on Software Engineering \(SIGSOFT\)](#), and the [Institute of Electrical and Electronics Engineers \(IEEE\)](#).

EDUCATION

PhD in Software Engineering

University of California, Irvine

GPA: 4.0

August 2018

Master of Science in Software Engineering

George Mason University, Fairfax, VA

GPA: 3.93

January 2014

Graduate Certificate in Web-Based Software Engineering

George Mason University, Fairfax, VA

Fall 2013

Bachelor of Science in Computer Science

Yarmouk University, Irbid, Jordan

GPA: 3.76

August 2005

WEBSITES

- **Personal website:** <https://hammadmahmoud.github.io/>
 - **Google Scholar:** <https://scholar.google.com/citations?user=IKOGjtEAAAAJ&hl=en&oi=ao>
 - **Research Gate:** <https://www.researchgate.net/profile/Mahmoud-Hammad-3>
 - **Academic website:** <https://www.just.edu.jo/eportfolio/Pages/default.aspx?email=m-hammad>
 - **ORCID:** <https://orcid.org/0000-0003-2891-0463>
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RESEARCH INTERESTS

- Software Engineering, Mobile Security, Self-Adaptive Software Systems, Software Architecture, Machine Learning, Deep Learning, Natural Language Processing
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EMPLOYMENT HISTORY

February 2022 – Present	Director of the Center for eLearning and Open Educational Resources Jordan University of Science and Technology
January 2019 – February 2022	Deputy Director of the Center for eLearning and Open Educational Resources Jordan University of Science and Technology
September 2018 – Present	Assistant Professor Software Engineering Department Jordan University of Science and Technology
January 2016 – August 2018	Researcher at Software Engineering & Analysis Lab University of California, Irvine
August 2016 - December 2016	Graduate Teaching Assistant University of California, Irvine
August 2015 - August 2016	Researcher at Software Engineering & Analysis Lab University of California, Irvine
January 2015 - July 2015	Researcher at System Design & Analysis Lab George Mason University Fairfax, VA

May 2013 – December 2014	Mobile Apps Developer The Helen A. Keller Institute Fairfax, VA
April 2006 – December 2011	Senior Oracle Application Developer Computer & Information Center Jordan University of science & technology Irbid, Jordan
August 2005 – March 2006	Software Engineer JoVal for IT Amman, Jordan

AWARDS & HONORS

- SIGSOFT CAPS Travel grant to attend the ASE 2018
- SIGSOFT CAPS Travel grant to attend the ICSE 2016
- Graduate Research Assistant scholarship from UCI
- Graduate Teaching Assistant scholarship from UCI
- Outstanding student achievement award – GMU, 2013
- Graduate Research Assistant scholarship from GMU
- Fellowship from Jordan University of Science & Technology, 2012 – 2016
- Ranked 1st among the 50 students who graduated on the same term
- Honor student list (Dean’s List) – Several times during my bachelor

PUBLICATIONS

JOURNALS

ID	Manuscript	Year
J12	Mohammad AL-Smadi, Mahmoud M. Hammad , Sa’ad A. Al-Zboon, Saja AL-Tawalbeh, Erik Cambria “Gated Recurrent Unit with Multilingual Universal Sentence Encoder for Arabic Aspect-Based Sentiment Analysis” Knowledge-Based System [Paper]	2022
J11	Farah Shatnawi, Malak Abdullah, Mahmoud M. Hammad , and Mahmoud Al-Ayyoub “Comprehensive study of pre-trained language models: detecting humor in news headlines” Soft Computing. [Paper].	2022
J10	Hammad, Mahmoud , Qanita Bani Baker, Mohammed Al-Smadi, and Wesam Alrashdan. "Towards Enhancing the User Experience (UX) of ChIP-Seq Data Analysis Web Tools." International Journal of Electrical & Computer Engineering (2088-8708)	2022

	(2022). [Paper]	
J9	Al-Smadi, Mohammed, Mahmoud M. Hammad , Qanita Bani Baker, Saja Khaled Tawalbeh, and Sa'ad A. Al-Zboon. "Transfer deep learning approach for detecting coronavirus disease in X-ray images." <i>International Journal of Electrical & Computer Engineering</i> (2088-8708) 11, no. 6 (2021). [Paper]	2021
J8	Mohammad, AL-Smadi, Mahmoud M. Hammad , A. Sa'ad, AL-Tawalbeh Saja, and Erik Cambria. "Gated Recurrent Unit with Multilingual Universal Sentence Encoder for Arabic Aspect-Based Sentiment Analysis." <i>Knowledge-Based Systems</i> (2021): 107540. [Paper]	2021
J7	Al-Smadi, Mohammed, Mahmoud M. Hammad , Qanita Bani Baker, and Sa'ad A. Al-Zboon. "A transfer learning with deep neural network approach for diabetic retinopathy classification." <i>International Journal of Electrical & Computer Engineering</i> (2088-8708) 11, no. 4 (2021). [Paper]	2021
J6	Hammad, Mahmoud , Mohammed Al-Smadi, Qanita Bani Baker, and Sa'ad A. Al-Zboon. "Using deep learning models for learning semantic text similarity of Arabic questions." <i>International Journal of Electrical & Computer Engineering</i> (2088-8708) 11, no. 4 (2021). [Paper]	2021
J5	Anas M.R. AlSobeh, Sawsan Al Shattnawi, Amin Jarrah, and Mahmoud M. Hammad . WEAVESIM: A Scalable And Reusable Cloud Simulation Framework Leveraging Aspect-Oriented Programming. <i>Jordanian Journal of Computers and Information Technology (JJCI)</i> . Accepted on April, 2020	2020
J4	Mahmoud M. Hammad , Mohammad AL-Smadi, Qanita Bani Baker, Muntaha Al-asa'd, Nour Al-khdour, Mutaz Bni Younes, and Enas Khwaileh. Question to Question Similarity Analysis Using Morphological, Syntactic, Semantic, and Lexical Features. <i>Journal of Universal Computer Science (J.UCS)</i> . Accepted on March 2020	2020
J3	Qanita Bani Baker, Mahmoud Hammad , Wesam Al-Rashdan, Yaser Jararweh, Mohammad AL-Smadi, and Mohammad Al-Zinatia. <i>Comprehensive Comparison of Cloud-Based NGS Data Analysis and Alignment Tools</i> . <i>Journal of Informatics in Medicine Unlocked(IMU)</i> , January 2020 [Paper], [Online]	2020
J2	Mahmoud Hammad , Hamid Bagheri, and Sam Malek. DELDroid: Determination and Enforcement of Least-Privilege Architecture in Android. <i>Journal of Systems and Software (JSS)</i> , November 2018	2018
J1	Joshua Garcia, Mahmoud Hammad , and Sam Malek. <i>Lightweight, Obfuscation-Resilient Detection and Family Identification of Android Malware</i> . <i>ACM Transactions on Software Engineering and Methodology (TOSEM)</i> . Volume 26, No. 3, Article 11 (January 2018) <ul style="list-style-type: none"> Integrated in the Software Assurance Marketplace (SWAMP) operated by University of Wisconsin–Madison 	2018

CONFERENCES

ID	Manuscript	Year
C15	Mahmoud M. Hammad , Ibrahim Abueisa, and Sam Malek “Tool-Assisted Componentization of Java Applications” 2022 IEEE 19th International Conference on Software Architecture (ICSA), Honolulu Hawaii, USA 12-15 March 2022. Acceptance rate 20% [Paper]	2022
C14	Saja Al-Tawalbeh, Mahmoud M. Hammad , Mohammad AL-Smadi “KEIS@JUST at SemEval-2020 Task 12: Identifying Multilingual Offensive Tweets Using Weighted Ensemble and Fine-Tuned BERT” Fourteenth Workshop on Semantic Evaluation (SemEval) Barcelona, Spain December 12-13, 2020 [Paper]	2020
C13	Farah Shatnawi, Malak A. Abdullah, Mahmoud M. Hammad “MLEngineer at SemEval-2020 Task 7: BERT-Flair Based Humor Detection Model (BFHumor)” Proceedings of the Fourteenth Workshop on Semantic Evaluation (SemEval) Barcelona, Spain December 12-13, 2020 [Paper]	2020
C12	Saja Tawalbeh, Mahmoud M. Hammad , Mohammed Al Smadi. SAJA at TRAC 2020 Shared Task: Transfer Learning for Aggressive Identification with XGBoost. The Second Workshop on Trolling, Aggression & Cyberbullying (TRAC 2020), May, 2020, Marseille, France.	2020
C11	Hafed Zarzour, Yaser Jararweh, Mahmoud Hammad and Mohammed Al-Smadi. A long short-term memory deep learning framework for explainable recommendation. The 11th International Conference on Information & Communication Systems (ICICS20), April, 2020, Irbid, Jordan.	2020
C10	Dalal Alharthi, Mahmoud M. Hammad , Amelia C Regan. A Taxonomy of Social Engineering Defense Mechanisms. Future of Information and Communications Conference (FICC 2020), March 2020, San Fransisco, USA.	2020
C9	Muntaha A. Al-As'ad, Nour Alkhdour, Mutaz mohammad Younes, Enas Khwaileh, Mahmoud M. Hammad , and Mohammad AL-Smadi. Question to Question Similarity Analysis Using Morphological, Syntactic, Semantic, and Lexical Features. 16th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2019), November 2019, Abu Dhabi, UAE.	2019
C8	Mohamed Soltani, Zarzour Hafed, Babahenini Mohamed, Mahmoud M. Hammad , Mohammad AL-Smadi, and Yaser Jararweh. An Emotional Feedback Based on Facial Action Coding System for MOOCs with Computer-Based Assessment. The Sixth IEEE International Conference on Social Networks Analysis, Management and Security (SNAMS 2019), October 2019, Granada, Spain.	2019
C7	Heba atta Aljarrah, Muntaha A. Al-As'ad, Saad A. Al-Zboon, Saja Tawalbeh, Mahmoud M. Hammad , and Mohammad AL-Smadi. Resolving Conflict of Interests and Recommending Expert Reviewers for Academic Publications Using Linked Open Data. The Sixth IEEE International Conference on Social Networks Analysis, Management and Security (SNAMS 2019), October 2019, Granada, Spain.	2019

C6	Saad A. Al-Zboon, Saja Tawalbeh, Heba atta Aljarrah, Muntaha A. Al-As'ad, Mahmoud M. Hammad , and Mohammad AL-Smadi. Resolving Conflict of Interests in Recommending Reviewers for Academic Publications Using Link Prediction Techniques. International Conference on New Trends in Computing Sciences (ICTCS 2019), October 2019, Amman, Jordan.	2019
C5	Mahmoud M. Hammad , Joshua Garcia, and Sam Malek. <i>SALMA: Self-Protection of Android Systems from Inter-Component Communication Attacks.</i> The 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2018), September 2018, Montpellier, France. (21% acceptance rate)	2018
C4	Joshua Garcia, Mahmoud M. Hammad , and Sam Malek. <i>Lightweight, Obfuscation-Resilient Detection and Family Identification of Android Malware.</i> International Conference of Software Engineering (ICSE 2018 Journal-first), May 2018, Gothenburg, Sweden.	2018
C3	Mahmoud M. Hammad , Joshua Garcia, and Sam Malek. <i>A Large-Scale Empirical Study on the Effects of Code Obfuscations on Android Apps and Anti-Malware Products.</i> International Conference of Software Engineering (ICSE 2018), May 2018, Gothenburg, Sweden. (20% acceptance rate)	2018
C2	Joshua Garcia, Mahmoud M. Hammad , Negar Ghorbani, and Sam Malek. <i>Automatic Generation of Inter-Component Communication Exploits for Android Applications.</i> European Software Engineering Conference and ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2017), September 2017, Paderborn, Germany. (24% acceptance rate)	2017
C1	Mahmoud M. Hammad , Hamid Bagheri, and Sam Malek. <i>Determination and Enforcement of Least-Privilege Architecture in Android.</i> International Conference of Software Architecture (ICSA 2017), Gothenburg, Sweden, April 2017. (22% acceptance rate) <ul style="list-style-type: none"> • <i>Nominated as best paper (6 out of 95 submissions)</i> 	2017

UNIVERSITY COMMITTEES

- Complaints and Suggestions Committee
- Member of the E-Learning Center's Council in the Jadara University
- Committee for establishing a strategic and executive plan for the inclusion of people with disabilities in higher education institution.
- Preparing for the The Higher Council for the Rights of People with Disabilities Award for Accessible Places Committee
- Scientific Research Committee
- Committee for improving the online exams system

- Committee for reviewing the university surveys and unifying them
- Student Mobility Program Evaluator

TECHNICAL REPORTS

- **Mahmoud Hammad**, Hamid Bagheri, and Sam Malek.
DELDroid: Determination and Enforcement of Least-Privilege Architecture in Android.
Journal of Systems and Software (October 1, 2017)
Institute for Software Research, University of California, Technical report # UCI-ISR-18-2

RESEARCH GRANTS

- Jordan University of Science and Technology (JUST)
Determination and enforcement of the component-based architecture for the object-oriented software systems.
Duration: 1/9/2019 – 1/9/2021
Award amount: 9,500 JOD
- Nazzal, M., Abu Al-Haija, H., Ababneh, E., Hammad, M. & Rawwash, R. (7/2021 – 2/2023).
Strengthening the right of people with disabilities in participation and integration through awareness, advocacy and creating a digital knowledge sharing platform on accessible places (JUST-ABLE), **(Approved for 72,000 CAD)**, Canadian Fund of Local Initiatives (CFLI), Canadian Embassy to Jordan, Amman, Jordan, Reference number CFLI-2021-AMMAN-0002. <https://justablejo.com/en/>

INVITED TALKS

- Invited talk: DELDroid: Determination and Enforcement of Least-Privilege Architecture in Android. OC I.E.E.E CyberSecurity. Tustin, CA. March 2017.
- Invited talk at the CORE conference: Experiences at universities with online learning, Dead Sea, Jordan October 26, 2022 [[Link](#)]

JOURNAL REFEREE

- Transactions on Software Engineering and Methodology (TOSEM), 2018, 2019, 2020, 2021, 2022.
- IEEE Transactions on Software Engineering (TSE), 2019, 2020, 2021, 2022.
- ACM Transactions on Autonomous and Adaptive Systems (TAAS), 2018.
- Journal of Software: Practice and Experience, 2018

- IET Software Journal, 2018
- IET Networks Journal, 2018

EDITORIAL BOARD MEMBER

- **Computer Science and Technology: Current Trends** [[Link](#)]

PROGRAM COMMITTEE

- PC Member, Evaluation and Assessment in Software Engineering (EASE), 2023
- PC Member, IEEE International Conference on Software Architecture (ICSA), 2023
- PC Member and track chair, The 13th International Conference on Information and Communication Systems (ICICS), 2022
- PC Member, IEEE International Conference on Software Architecture (ICSA), 2022
- PC Member and track chair, The 12th International Conference on Information and Communication Systems (ICICS), 2021
- PC Member, IEEE International Conference on Software Architecture (ICSA), 2021
- PC Member, Artifact Evaluation Track at the 43rd International Conference on Software Engineering (ICSE), 2021
- PC Member and track chair, The 11th International Conference on Information and Communication Systems (ICICS), 2020
- PC Member, IEEE International Conference on Software Architecture (ICSA), 2020
- PC Member, Sixth International Conference on Social Networks Analysis, Management and Security (SNAMS), 2019
- PC Member, Special Issue in Recent Advances on Social Networks Analysis, Management and Security (SNAMS), 2018
- PC Member, Artifact Evaluation Committee, International Conference on Software Engineering (ICSE 2021)
- PC Member, IEEE International Conference on Software Architecture (ICSA 2020)
- PC Member, The 10th International Conference on Information and Communication Systems ([ICICS 2019](#)), Irbid, Jordan, June 2019
- PC Member, Artifact Evaluation Committee, 14th International Symposium on Software Engineering for Adaptive and SelfManaging Systems ([SEAMS 2019](#)), Montreal, Canada, May 2019
- PC Member, Artifact Evaluation Committee, 13th International Symposium on Software Engineering for Adaptive and SelfManaging Systems ([SEAMS 2018](#)), Gothenburg, Sweden, May 2018
- PC Member, Artifact Evaluation Committee, 12th International Symposium on Software Engineering for Adaptive and SelfManaging Systems ([SEAMS 2017](#)), Buenos Aires, Argentina, May 2017
- Member, Resilient Autonomic Software Systems ([RASS](#)) project, a group of researchers from UCI and George Mason University (GMU) working on conceptualizing a framework called RASS for self-managing autonomic systems.

REVIEWER SERVICE

- 12th Workshop on Distributed Software Development, Software Ecosystems and Systems-of-Systems (WDES), 2018
- 12th European Conference on Software Architecture (FAS), 2018
- The 12th Workshop on Distributed Software Development, Software Ecosystems and Systems-of-Systems ([WDES](#)), 2018
- The 12th European Conference on Software Architecture ([ECSA](#)), 2018
- The 12th IEEE International Conference on Self-Adaptive and Self-Organizing Systems ([SASO](#)), 2018
- 13th International Symposium on Software Engineering for Adaptive and SelfManaging Systems ([SEAMS](#) 2018), Gothenburg, Sweden, May 2018.
- 14th IEEE International Conference on Autonomic Computing (ICAC), 2017
- 4th IEEE/ACM International Conference on Mobile Software Engineering and Systems (MobileSoft), 2017
- 4th IEEE/ACM International Conference on Mobile Software Engineering and Systems ([MOBILESoft](#)), 2017
- 11th European Conference on Software Architecture ([ECSA](#)), 2017
- 2nd eCAS Workshop on Engineering Collective Adaptive Systems ([eCAS](#)), co-located with [SASO](#), 2017
- The 1st International Workshop on App Market Analytics ([WAMA](#)), 2016
- The 13th IEEE International Conference on Autonomic Computing ([ICAC](#)), 2016
- The 10th IEEE International Conference on Self-Adaptive and Self-Organizing Systems ([SASO](#)), 2016

TECHNICAL SKILLS

Design Method & Pattern	COMET Design method using UML 2
UML and Architecture Design Tools	Microsoft Visio, Rational Rose, Visual Paradigm
Software Development Platforms	MS .NET framework, Oracle ADF Jdeveloper 11g, Eclipse, Net Beans
Programming Language	Java, Objective-C, C#, ASP.NET, VB .NET, Oracle SQL/PLSQL,
Business Intelligence Packages	HTML 5, JavaScript, Java EJB 3, Python
Databases	Oracle BI Discoverer, Oracle BI Designer
Implementation Architecture	Oracle DBMS, MS SQL, MySQL
Mobile Development	MVC architecture using java servlet and struts 2
Web Services	Android app development, iOS app development
Network Tools	SOAP, RESTful
	WireShark, Snort, iptable

TRAINING & CERTIFICATES

- Oracle PL/SQL Developer Certified Associate (OCA).
- C#.NET 2005 at JUST, Irbid, Jordan.
- ASP.NET 2005 at JUST, Irbid, Jordan.
- Microsoft Office SharePoint Server 2007 Configuration at JUST, Irbid, Jordan.
- UML modeling using rational rose at JUST, Irbid, Jordan.
- Project Management Training and Certification Program at Method Corporation using PMI standards.
- Microsoft Project Using PMI Best Practices at Method Corporation, Irbid, Jordan

TEACHING

- Client/Server Programming using Java
- Visual Programming using C#
- Software Security
- Java Programming

SUPERVISED MASTER STUDENTS

- Noor Abu Ennab (co-advisor)
- Osama Salameh (advisor)
- Sajeda Banat (co-advisor)
- Farah Shatnawi (co-advisor)
- Heba Aljarrah (co-advisor)