Hamid Bagheri

Associate Professor
University of Nebraska
Computer Science and Engineering Dept.
365 Avery Hall
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EDUCATION

Doctor of Philosophy Computer Science May 2013
University of Virginia
Dissertation: *Synthesis from Formal Partial Abstractions*

Master of Science Software Engineering January 2008
Sharif University of Technology

Bachelor of Science Computer Engineering September 2005
University of Tehran
Emphasis on Software Engineering

EMPLOYMENT HISTORY

University of Nebraska-Lincoln Lincoln, NE

- **Associate Professor** August 2022–current
  School of Computing

Empirically-based Software Quality Research and Development Lab Lincoln, NE

- **Co-Director** August 2016–current
  School of Computing

University of Nebraska-Lincoln Lincoln, NE

- **Assistant Professor** August 2016–July 2022
  Computer Science and Engineering Department

University of California, Irvine Irvine, CA

- **Postdoctoral Research Fellow** August 2015–August 2016
  Institute for Software Research

Massachusetts Institute of Technology Cambridge, MA

- **Postdoctoral Research Fellow** September 2014–August 2015
  Computer Science and Artificial Intelligence Laboratory

George Mason University Farifax, VA

- **Postdoctoral Research Fellow** September 2013–August 2014
  Computer Science Department

PUBLICATIONS

Journal Articles

[10] M. Alhanahnah, C. Stevens, B. Chen, Q. Yan, and **H. Bagheri**, "Iotcom: Dissecting interaction threats in iot systems," *IEEE Transactions on Software Engineering **(IEEE TSE)***, 2022

[9] **H. Bagheri**, J. Wang, J. Aerts, N. Ghorbani, and S. Malek, "Flair: Efficient analysis of android inter-component vulnerabilities in response to incremental changes," *Empirical Software Engineering (**EMSE**)*, vol. 26, pp. 54–90, Apr. 2021

[8] M. Alhanahnah, Q. Yan, **H. Bagheri**, H. Zhou, Y. Tsutano, W. Srisa-an, and X. Luo, "Dina: Detecting hidden android inter-app communication in dynamic loaded code," *IEEE Transactions on Information Forensics & Security **(IEEE TIFS)**, vol. 15, pp. 2782–2797, 2020*

[7] M. Hammad, **H. Bagheri**, and S. Malek, "Deldroid: An automated approach for determination and enforcement of least-privilege architecture in android," *Journal of Systems and Software (**JSS**)*, vol. 149, pp. 81–100, 2019

[6] **H. Bagheri**, E. Kang, S. Malek, and D. Jackson, "A formal approach for detection of security flaws in the android permission system," *Formal Aspects of Computing (**FAoC**)*, vol. 30, no. 5, pp. 525–544, 2018

[5] **H. Bagheri**, C. Tang, and K. J. Sullivan, "Automated synthesis and dynamic analysis of tradeoff spaces for object-relational mapping," *IEEE Transactions on Software Engineering (**IEEE TSE**)*, vol. 43, no. 2, pp. 145–163, 2017

[4] A. Sadeghi, **H. Bagheri**, J. Garcia, and S. Malek, "A taxonomy and qualitative comparison of program analysis techniques for security assessment of android software," *IEEE Transactions on Software Engineering (**IEEE TSE**)*, vol. 43, no. 6, pp. 492–530, 2017 **– Journal First Paper**

[3] **H. Bagheri** and K. J. Sullivan, "Model-driven synthesis of formally precise, stylized software architectures," *Formal Aspects of Computing (**FAoC**)*, vol. 28, no. 3, pp. 441–467, 2016

[2] **H. Bagheri**, J. Garcia, A. Sadeghi, S. Malek, and N. Medvidovic, "Software architectural principles in contemporary mobile software: from conception to practice," *Journal of Systems and Software **(JSS)***, vol. 119, pp. 31–44, 2016

[1] **H. Bagheri**, A. Sadeghi, J. Garcia, and S. Malek, "COVERT: compositional analysis of android inter-app permission leakage," *IEEE Transactions on Software Engineering (**IEEE TSE**)*, vol. 41, no. 9, pp. 866–886, 2015 **– Journal First Paper**

Conference Publications

[44] C. Stevens and **H. Bagheri**, "Combining solution reuse and bound tightening for efficient analysis of evolving systems," in *ISSTA '22: 31st ACM SIGSOFT International Symposium on Software Testing and Analysis, Virtual Event, South Korea, July 18 - 22, **ISSTA 2022*** (S. Ryu and Y. Smaragdakis, eds.), pp. 89–100, ACM, 2022. (acceptance rate: 24%)
ACM SIGSOFT Distinguished Paper Award

[43] G. Zheng, T. Nguyen, S. G. Brida, G. Regis, N. Aguirre, M. F. Frias, and **H. Bagheri**, "ATR: template-based repair for alloy specifications," in *ISSTA '22: 31st ACM SIGSOFT International Symposium on Software Testing and Analysis, Virtual Event, South Korea, July 18 - 22, **ISSTA 2022*** (S. Ryu and Y. Smaragdakis, eds.), pp. 666–677, ACM, 2022. (acceptance rate: 24%)

[42] B. Silva, C. Stevens, N. Mansoor, W. Srisa-an, T. Yu, and **H. Bagheri**, "Saintdroid: Scalable, auto-

mated incompatibility detection for android," in *52nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks, **DSN 2022**, Baltimore, MD, USA, June 27-30, 2022*, pp. 567–579, IEEE, 2022. (acceptance rate: 18%)

[41] S. G. Brida, G. Regis, G. Zheng, **H. Bagheri**, T. Nguyen, N. Aguirre, and M. F. Frias, "Icebar: Feedback-driven iterative repair of alloy specifications," in *37th IEEE/ACM International Conference on Automated Software Engineering, ASE 2022, October 10âĂŞ14, 2022, Rochester, MI, USA*, ACM, **ASE 2022**. (acceptance rate: 22%)

[40] **H. Bagheri**, J. Wang, J. Aerts, N. Ghorbani, and S. Malek, "Flair: efficient analysis of android inter-component vulnerabilities in response to incremental changes," vol. 26, p. 54, **ICSE 2021**. (acceptance rate: 22%)

[39] S. G. Brida, G. Regis, G. Zheng, **H. Bagheri**, T. Nguyen, N. Aguirre, and M. F. Frias, "Bounded exhaustive search of alloy specification repairs," in *43rd IEEE/ACM International Conference on Software Engineering, ICSE 2021, Madrid, Spain, 22-30 May 2021*, pp. 1135–1147, IEEE, **ICSE 2021**. (acceptance rate: 22%)

[38] Z. Hu, B. V. R. e Silva, **H. Bagheri**, W. Srisa-an, G. Rothermel, and J. Dinh, "SEMEO: A semantic equivalence analysis framework for obfuscated android applications," in *Mobile and Ubiquitous Systems: Computing, Networking and Services - 18th EAI International Conference, MobiQuitous 2021, Virtual Event, November 8-11, 2021, Proceedings* (T. Hara and H. Yamaguchi, eds.), vol. 419 of *Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, pp. 322–346, Springer, 2021.

[37] M. Alhanahnah, C. Stevens, and **H. Bagheri**, "Scalable analysis of interaction threats in iot systems," in *Proceedings of 29th ACM SIGSOFT International Symposium on Software Testing and Analysis, Virtual Event, USA, July 18-22, 2020*, pp. 272–285, ACM, **(ISSTA 2020)**. (acceptance rate: 25%) **ACM SIGSOFT Distinguished Paper Award**

[36] C. Stevens and **H. Bagheri**, "Reducing run-time adaptation space via analysis of possible utility bounds," in *Proceedings of 42nd International Conference on Software Engineering, Seoul, South Korea, 27 June - 19 July, 2020*, pp. 1522–1534, ACM, (**ICSE 2020**). (acceptance rate: 20%)

[35] B. Balasubramanian, **H. Bagheri**, S. Elbaum, and J. Bradley, "Investigating controller evolution and divergence through mining and mutation," in *Proceedings of 11th IEEE/ACM International Conference on Cyber-Physical Systems, Sydney, Australia, April 21-25, 2020*, pp. 151–161, IEEE, (**ICCPS 2020**). (acceptance rate: 23%) **Featured in ICCPS Best Papers**

[34] G. Zheng, **H. Bagheri**, G. Rothermel, and J. Wang, "Platinum: Reusing constraint solutions in bounded analysis of relational logic," in *Proceedings of 23rd International Conference on Fundamental Approaches to Software Engineering, Dublin, Ireland, April 25-30, 2020*, vol. 12076 of *Lecture Notes in Computer Science*, pp. 29–52, Springer, (**FASE 2020**). (acceptance rate: 21%)

[33] **H. Bagheri**, E. Kang, and N. Mansoor, "Synthesis of assurance cases for software certification," in *Proceedings of 42nd International Conference on Software Engineering, New Ideas and Emerging Results Track **(ICSE-NIER)**, Seoul, South Korea, 27 June - 19 July, 2020*, pp. 61–64, ACM, 2020.

[32] J. Bradley and **H. Bagheri**, "Control software: Research directions in the intersection of control theory and software engineering," in *Proceedings of AIAA SciTech, Orlando, Florida*, Jan. 2020.

[31] G. Zheng, **H. Bagheri**, and T. Nguyen, "Debugging declarative models in alloy," in *IEEE International Conference on Software Maintenance and Evolution, Adelaide, Australia, September 28 - October 2, 2020*, pp. 844–848, IEEE, (**ICSME 2020**).

[30] C. Stevens, M. Alhanahnah, Q. Yan, and **H. Bagheri**, "Comparing formal models of iot app coordination analysis," in *Foundations of Software Engineering, Workshop on Software Security from Design to Deployment (FSE SEAD)*, pp. 3–10, 2020.

[29] M. Alhanahnah, Q. Yan, **H. Bagheri**, H. Zhou, Y. Tsutano, W. Srisa-an, and X. Luo, "Detecting vulnerable android Inter-App communication in dynamically loaded code," in *Proceedings of the IEEE Conference on Computer Communications, Paris, France*, (**INFOCOM 2019**). (acceptance rate: 19%)

[28] J. Wang, **H. Bagheri**, and M. B. Cohen, "An evolutionary approach for analyzing alloy specifications," in *Proceedings of the 33rd ACM/IEEE International Conference on Automated Software Engineering, Montpellier, France, September 3-7, 2018*, pp. 820–825, (**ASE 2018**). (acceptance rate: 20%)

[27] N. Mansoor, J. A. Saddler, B. Silva, **H. Bagheri**, M. Cohen, and S. Farritor, "Modeling and testing a family of surgical robots: An experience report," in *Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Lake Buena Vista, FL, USA, November 4-9*, (**ESEC/FSE 2018**).

[26] **H. Bagheri**, J. Wang, J. Aerts, and S. Malek, "Efficient, evolutionary security analysis of interacting android apps," in *Proceedings of the 34th IEEE International Conference on Software Maintenance and Evolution, Madrid, Spain, September 23-29, 2018*, pp. 386–397, (**ICSME 2018**). (acceptance rate: 25%) **Nominated for the Best Paper Award**

[25] A. Sadeghi, R. Jabbarvand, N. Ghorbani, **H. Bagheri**, and S. Malek, "A temporal permission analysis and enforcement framework for android," in *Proceedings of the 40th International Conference on Software Engineering, Gothenburg, Sweden, May 27 - June 03, 2018*, pp. 846–857, ACM, (**ICSE 2018**). (acceptance rate: 21%)

[24] M. Hammad, **H. Bagheri**, and S. Malek, "Determination and enforcement of least-privilege architecture in android," in *2017 IEEE International Conference on Software Architecture, Gothenburg, Sweden, April 3-7, 2017*, pp. 59–68, (**ICSA 2017**). (acceptance rate: 22%)
Nominated for the Best Paper Award

[23] C. Tang, **H. Bagheri**, S. Paisarnsrisomsuk, and K. J. Sullivan, "Towards designing effective data persistence through tradeoff space analysis," in *Proceedings of the 39th International Conference on Software Engineering (ICSE 2017), Buenos Aires, Argentina, May 20-28, 2017 Volume*, pp. 353–355, IEEE Computer Society, 2017.

[22] **H. Bagheri** and S. Malek, "Titanium: efficient analysis of evolving alloy specifications," in *Proceedings of the 24th ACM SIGSOFT International Symposium on Foundations of Software Engineering, Seattle, WA, USA, November 13-18, 2016*, pp. 27–38, (**FSE 2016**). (acceptance rate: 25%)

[21] **H. Bagheri**, A. Sadeghi, R. J. Behrouz, and S. Malek, "Practical, formal synthesis and automatic enforcement of security policies for android," in *46th Annual IEEE/IFIP International Conference on Dependable Systems and Networks, Toulouse, France, June 28 - July 1, 2016*, pp. 514–525, IEEE Computer Society, (**DSN 2016**). (acceptance rate: 20%)

[20] B. R. Schmerl, J. Gennari, A. Sadeghi, **H. Bagheri**, S. Malek, J. Cámara, and D. Garlan, "Architecture modeling and analysis of security in android systems," in *Software Architecture - 10th European Conference, Denmark, November 28 - December 2, 2016, Proceedings*, pp. 274–290, (**ECSA 2016**) **– Invited for Journal special issue**. (acceptance rate: 14%)

[19] N. Mirzaei, J. Garcia, **H. Bagheri**, A. Sadeghi, and S. Malek, "Reducing combinatorics in GUI testing of android applications," in *Proceedings of the 38th International Conference on Software Engineer-*

ing, Austin, TX, USA, May 14-22, 2016, pp. 559–570, ACM, (**ICSE 2016**). (acceptance rate: 19%)

[18] R. J. Behrouz, A. Sadeghi, **H. Bagheri**, and S. Malek, "Energy-aware test-suite minimization for android apps," in *Proceedings of the 25th International Symposium on Software Testing and Analysis, Saarbrücken, Germany, July 18-20, 2016*, pp. 425–436, ACM, (**ISSTA 2016**). (acceptance rate: 25%)

[17] **H. Bagheri**, E. Kang, S. Malek, and D. Jackson, "Detection of design flaws in the android permission protocol through bounded verification," in *Proceedings of the 20th International Symposium on Formal Methods, Oslo, Norway, June 24-26, 2015*, pp. 73–89, (**FM 2015**). (acceptance rate: 26%) **Nominated for the Best Paper Award**

[16] A. Sadeghi, **H. Bagheri**, and S. Malek, "Analysis of android inter-app security vulnerabilities using COVERT," in *37th IEEE/ACM International Conference on Software Engineering (ICSE 2015), Florence, Italy, May 16-24, 2015*, pp. 725–728, IEEE Computer Society, 2015.

[15] N. Mirzaei, **H. Bagheri**, R. Mahmood, and S. Malek, "Sig-droid: Automated system input generation for android applications," in *26th IEEE International Symposium on Software Reliability Engineering, Gaithersbury, MD, USA, November 2-5, 2015*, pp. 461–471, IEEE Computer Society, (**ISSRE 2015**). (acceptance rate: 19%)

[14] E. Kouroshfar, M. Mirakhorli, **H. Bagheri**, L. Xiao, S. Malek, and Y. Cai, "A study on the role of software architecture in the evolution and quality of software," in *12th IEEE/ACM Working Conference on Mining Software Repositories, Florence, Italy, May 16-17, 2015*, pp. 246–257, IEEE Computer Society, (**MSR 2015**). (acceptance rate: 30%)

[13] **H. Bagheri**, C. Tang, and K. J. Sullivan, "Trademaker: automated dynamic analysis of synthesized tradespaces," in *36th International Conference on Software Engineering, Hyderabad, India - May 31 - June 07, 2014*, pp. 106–116, ACM, (**ICSE 2014**). (acceptance rate: 20%)

[12] S. Malek, **H. Bagheri**, and A. Sadeghi, "Automated detection and mitigation of inter-application security vulnerabilities in android," in *Proceedings of the 2nd International Workshop on Software Development Lifecycle for Mobile, DeMobile 2014, Hong Kong, China, November 17, 2014*, pp. 17–18, ACM, 2014.

[11] **H. Bagheri** and K. J. Sullivan, "Bottom-up model-driven development," in *35th International Conference on Software Engineering (ICSE '13), San Francisco, CA, USA, May 18-26, 2013*, pp. 1221–1224, IEEE Computer Society, 2013. (acceptance rate: 22%)

[10] **H. Bagheri** and K. J. Sullivan, "Pol: specification-driven synthesis of architectural code frameworks for platform-based applications," in *Generative Programming and Component Engineering, Dresden, Germany, September 26-28, 2012*, pp. 93–102, ACM, (**GPCE 2012**). (acceptance rate: 34%)

[9] **H. Bagheri**, K. J. Sullivan, and S. H. Son, "Spacemaker: Practical formal synthesis of tradeoff spaces for object-relational mapping," in *Proceedings of the 24th International Conference on Software Engineering & Knowledge Engineering, Hotel Sofitel, Redwood City, San Francisco Bay, USA July 1-3, 2012*, pp. 688–693, Knowledge Systems Institute Graduate School, 2012. (acceptance rate: 27%)

[8] **H. Bagheri**, "A formal approach to software synthesis for architectural platforms," in *Proceedings of the 33rd International Conference on Software Engineering (ICSE 2011), Waikiki, Honolulu , HI, USA, May 21-28, 2011*, pp. 1143–1145, ACM, 2011.

[7] **H. Bagheri** and K. J. Sullivan, "A formal approach for incorporating architectural tactics into the software architecture," in *Proceedings of the 23rd International Conference on Software Engineering & Knowledge Engineering, Eden Roc Renaissance, Miami Beach, USA, July 7-9, 2011*, pp. 770–775, Knowledge Systems Institute Graduate School, 2011. (acceptance rate: 33%)

[6] **H. Bagheri** and K. J. Sullivan, "Architecture as an independent variable for aspect-oriented application descriptions," in *Proceedings of the Second International Conference on Abstract State Machines, Alloy, B and Z (ABZ 2010), Orford, QC, Canada, February 22-25, 2010. Proceedings*, vol. 5977 of *Lecture Notes in Computer Science*, p. 395, Springer, 2010.

[5] **H. Bagheri**, Y. Song, and K. J. Sullivan, "Architectural style as an independent variable," in *Proceedings of the 25th IEEE/ACM International Conference on Automated Software Engineering, Antwerp, Belgium, September 20-24, 2010*, (**ASE 2010**).

[4] **H. Bagheri** and K. J. Sullivan, "Monarch: Model-based development of software architectures," in *Proceedings of the 13th International Conference Model Driven Engineering Languages and Systems, Oslo, Norway, October 3-8, 2010,*, vol. 6395 of *Lecture Notes in Computer Science*, pp. 376–390, Springer, (**MODELS 2010**). (acceptance rate: 20%)

[3] **H. Bagheri**, V. Montaghami, G. Safi, and S. Mirian-Hosseinabadi, "An evaluation method for aspectual modeling of distributed software architectures," in *The 6th ACS/IEEE International Conference on Computer Systems and Applications, AICCSA 2008, Doha, Qatar, March 31 - April 4, 2008*, pp. 903–908, IEEE Computer Society, 2008.

[2] **H. Bagheri**, "Injecting security as aspectable NFR into software architecture," in *14th Asia-Pacific Software Engineering Conference (APSEC 2007), 5-7 December 2007, Nagoya, Japan*, pp. 310–317, IEEE Computer Society, 2007. (acceptance rate: 31%)

[1] **H. Bagheri**, S. Mirian-Hosseinabadi, and H. C. Esfahani, "An aspect enhanced method of NFR modeling in software architecture," in *10th International Conference on Information Technology, ICIT 2007, Roukela, India, 17-20 December 2007*, pp. 240–242, IEEE Computer Society, 2007.

Book Chapter

[1] S. Malek, **H. Bagheri**, J. Garcia, and A. Sadeghi, "Security and software engineering," in *Handbook of Software Engineering* (K. C. Kang, R. Taylor, and S. Cha, eds.), Springer, 2019

Thesis

- **H. Bagheri**, *Synthesis from Formal Partial Abstractions*. PhD thesis, University of Virginia, 2013

RESEARCH GRANTS

1. National Science Foundation (NSF), CCF-2124116
   FMitF: Track I: Flow Modeling Meets Software Verification: Redesign Internet Congestion Control for Performance and Verifiability
   Duration: 10/1/2021 – 9/30/2025
   PIs: Lisong Xu, Hamid Bagheri
   Award Amount: $750,000
2. National Science Foundation (NSF), CCF-2139845
   EAGER: CCF: SHF: Scalable Software Verification through Automated Derivation of Domain-Specific Optimization Tactics
   Duration: 9/1/2021 – 8/31/2023
   PI: Hamid Bagheri
   Award Amount: $198,944
3. National Science Foundation (NSF), CCF-1755890
   CRII: SHF: Leveraging Synthesis for Dynamic Design Space Analysis
   Duration: 2/1/2018 – 1/31/2021

PI: Hamid Bagheri
Award Amount: $174,987

4. National Science Foundation (NSF), CCF-1618132
   SHF: Efficient Formal Analysis of Evolving Software Systems
   Duration: 7/1/2016 – 6/30/2020
   PIs: Sam Malek, Hamid Bagheri
   Award Amount: $515,170
5. NU System Science, Collaboration Initiative Grant
   A Model-Based Approach to Dependability for a Family of Surgical Robots
   Duration: 7/1/2017 – 6/30/2019
   PIs: Shane Farritor, Hamid Bagheri, Myra Cohen
   Award Amount: $300,000
6. National Science Foundation (NSF), EPSCoR First Award
   Duration: 4/1/2017 – 6/30/2018
   PI: Hamid Bagheri
   Award Amount: $50,000

Honors and Awards

- ACM SIGSOFT Distinguished Paper Award, ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), 2022
- ACM SIGSOFT Distinguished Paper Award, ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), 2020
- CSE Department Student Choice Outstanding Teaching Award: Graduate Level, 2019-2020
- Distinguished Reviewer, ACM Transactions on Software Engineering and Methodology (TOSEM), 2020
- Outstanding Service on the Program Committee, 28th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2020
- ICCPS Best Paper, IEEE/ACM International Conference on Cyber-Physical Systems, (ICCPS), 2020
- NSF CISE Career Research Initiation Initiative Award, 2018
- NSF EPSCoR First Award, 2017
- UNL Research and Development Fellowship, 2017–2018
- NSF travel grant to attend ICSE Conference – 2017
- NSF travel grant to attend ASE Conference – 2017
- Distinguished paper award for [C31] – 2012
- ACM travel grant – 2011
- ACM Graduate Student Research Competition finalist, ICSE, 2011
- Outstanding Graduate Student Researcher, Sharif University, 2008
- International RoboCup Competition finalist, 2003

SUPERVISED STUDENTS

PhD Students

1. Jianghao Wang — July 2017–current
   Status: advanced to candidacy
2. Guolong Zheng (Co-advised with Nguyen) — July 2017–current
   Status: advanced to candidacy

3. Clay Stevens — July 2018–current
   Status: advanced to candidacy
4. Balaji Balasubramanian (Co-advised with Bradley) — July 2018–current
   Status: advanced to candidacy
5. Sasan Azizian — January 2019–current
   Status: passed the qualifying exam
6. Fahmida Afrin — Aug 2021–current
   Status: just started her PhD

Graduated PhD Student

1. Mohannad Alhanahnah — Graduation date: December 2019
   Thesis: Advanced Security Analysis for Emergent Software Platforms
   First employment: Postdoctoral Associate, University of Wisconsin, Madison

Graduated MS Students

1. Jianghao Wang
   Graduation date: December 2018
   Thesis: EvoAlloy: An Evolutionary Approach for Analyzing Alloy
   First employment: Pursuing his PhD at UNL
2. Bruno Silva
   Graduation date: May 2019
   Thesis: GainDroid: General Automated Incompatibility Notifier for Android Applications
   First employment: Basicblock Corporation
3. Niloofar Mansoor
   Graduation date: December 2019
   Thesis: Formal Modeling and Analysis of a Family of Surgical Robots
   First employment: Pursuing her PhD at UNL
4. Chenxi Yu
   Graduation date: August 2021
   Thesis: A Novel Method for Reducing the Overhead of Titanium Analyzer
5. Jun Sun (Co-advised with Witawas Srisa-an)
   Graduation date: August 2021
   Thesis: A Real-World, Hybrid Event Sequence Generation Framework for Android

Undergraduate Students

1. Jarod Aerts — Graduated December 2020
   - Funded by NSF REU Award
2. Brooke Lampe (with honors thesis) — Graduated December 2020
   - Funded by NSF REU Award

TEACHING

Courses Developed

CSCE 990: Mobile Software Analysis

A seminar course for upper-level undergraduates and graduate students on mobile software analysis, including a literature review, a shortened NSF-style proposal as well as an ACM-style technical report by each student.

CSCE 488/866: Software Design and Architecture

Lecture-discussion course for upper-level undergraduates and graduate students on software design and architecture. I entirely redesigned the course, by combining fundamental concepts in software architecture (SA) with their applications in the context of real systems. Students study SA with a focus on software validation techniques that leverage architectural models and formal analyzers. Students learn an architectural description language, learn about feature modeling for software product line engineering (SPLE), learn about the architecture of the Android operating system and learn about self-adaptive software. The course consists of some individual homework assignments, paper reviews and presentations and as well as a term project.

Courses

- CSCE 466/866: Software Design and Architecture — Spring 2021
- CSCE 990: Mobile Software Analysis — Spring 2021
- CSCE 461/866: Advanced Software Engineering — Fall 2020
- CSCE 496/896: Logic for Systems — Spring 2020
- CSCE 990: Mobile Software Analysis — Spring 2020
- CSCE 461/866: Advanced Software Engineering — Fall 2019
- CSCE 488/866: Software Design and Architecture — Spring 2019
- CSCE 461/866: Advanced Software Engineering — Fall 2018
- CSCE 990: Mobile Software Analysis — Fall 2018
- CSCE 361: Software Engineering — Spring 2018
- CSCE 990: Mobile Software Analysis — Fall 2017
- CSCE 488/866: Software Design and Architecture — Spring 2017
- CSCE 990: Mobile Software Analysis — Fall 2016

PROFESSIONAL SERVICE

Journal Board Membership

- Review Board, IEEE Transactions on Software Engineering (TSE), 2019.
- Review Board, ACM Transactions on Software Engineering and Methodology (TOSEM), 2019.

Program Committee, Program Chair, and Panel Membership

- PC Member, 44th ACM/IEEE International Conference on Software Engineering (ICSE), New Ideas and Emerging Results track, Pittsburgh, PA, May 2022
- Web Co-Chair, 44th ACM/IEEE International Conference on Software Engineering (ICSE), Pittsburgh, PA, May 2022
- PC Member, 37th IEEE International Conference on Software Maintenance and Evolution (ICSME), Luxembourg City (Virtual Event), September-October 2021
- PC Member, 2021 Mining Software Repositories Conference (MSR), Madrid, Spain (Virtual Event), May 2021

- PC Member, 7th IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft), Madrid, Spain (Virtual Event), May 2021
- PC Member, IEEE International Conference on Software Architecture (ICSA), Stuttgart, Germany (Virtual Event), March 2021
- PC Member, 28th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), Sacramento, California (Virtual Event), November 2020
- PC Member, 36th IEEE International Conference on Software Maintenance and Evolution (ICSME), Adelaide, Australia (Virtual Event), September-October 2020
- PC Member, 7th IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft), Yongsan-gu, Seoul, South Korea (Virtual Event), May 2020
- PC Member, IEEE International Conference on Software Architecture (ICSA), Salvador, Brazil (Virtual Event), March 2020
- Panel Member, EPSCoR FIRST Award, November 2019
- PC Member, 41st ACM/IEEE International Conference on Software Engineering (ICSE), New Ideas and Emerging Results track, Montréal, QC, Canada, May 2019
- PC Member, 34th IEEE/ACM International Conference on Automated Software Engineering (ASE), Journal First, San Diego, California, November 2019
- PC Member, 34th IEEE/ACM International Conference on Automated Software Engineering (ASE), Late Breaking Results, San Diego, California, November 2019
- PC Member, 35th IEEE International Conference on Software Maintenance and Evolution (ICSME), Cleveland, OH, USA, September-October 2019
- PC Member, 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE), Montpellier, France, September 2018
- PC Member, 26th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), Demonstration Track, Lake Buena Vista, Florida, November 2018
- NSF Panel Member, Secure and Trustworthy Computing, Alexandria, VA, April 2018
- Program Co-Chair, ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), Demonstration Track, Amsterdam, Netherlands, July 2018.
- PC Member, The 2018 International Workshop on Advances in Mobile App Analysis (A-Mobile), Montpellier, France, September 2018.
- PC Member, International Workshop on Establishing the Community-Wide Infrastructure for Architecture-Based Software Engineering (ECASE 2017), Buenos Aires, Argentina, May 2017.

Reviewer Service

- IEEE Transactions on Software Engineering (TSE), since 2015
- ACM Transactions on Software Engineering and Methodology (TOSEM), since 2016
- Empirical Software Engineering, since 2020
- IEEE Transactions on Software Reliability, since 2017
- IEEE Transactions on Dependable and Secure Computing, since 2017
- IEEE Software, since 2015
- ACM Transactions on Autonomous and Adaptive Systems, since 2019
- Journal of Software: Evolution and Process, since 2019

- International Journal on Software Tools for Technology Transfer, since 2015
- Journal of Software: Evolution and Process, since 2019
- Journal of Information Security and Applications, since 2017
- International Journal on Software Engineering and Knowledge Engineering, since 2014
- Science of Computer Programming, since 2016

UNIVERSITY SERVICE

- Chair, Colloquium, CSE Department, UNL, 2020–2021
- Member, Faculty Recruitment Committee, CSE Department, UNL, 2019–2020
- Member, Qualifying Exam, CSE Department, UNL, 2018–2021
- Member, Faculty Recruitment Committee, CSE Department, UNL, 2018–2019
- Member, Software Engineering Faculty Recruitment Committee, CSE Department, UNL, 2017–2018
- Chief Judge, ACM North Central North America Regional Programming Contest, 2017
- Member, Graduate Admissions Committee, CSE Department, UNL, 2016–2020
- Member, Graduate Travel Awards Committee, UNL, 2016 - 2017

PROFESSIONAL ASSOCIATIONS

- Association for Computing Machinery (ACM)
- ACM Special Interest Group on Software Engineering (SIGSOFT)
- Institute of Electrical and Electronics Engineers (IEEE)