

# Pooyan Jamshidi

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## RESEARCH INTERESTS

My research interests span the areas of **Software, Systems, AI/ML**, and **Robotics**. In particular, I am interested in developing algorithms and tools that enable building resilient systems, deployed in dynamic environments that can automatically handle goal tradeoffs, incorporate user preferences and constraints, identify causes of failures, and self-adapt to recover from failure. I integrate *distributed systems, control theory, statistical learning and optimization, causality, and program analysis*.

## PROFESSIONAL EXPERIENCE

- 8/2018–\* **Assistant Professor (Computer Science & Engineering)**, *University of South Carolina*, Columbia, SC, US  
Directing the AISys lab: <https://pooyanjamshidi.github.io/AISys/>
- 5/2021–12/2021 **Visiting Researcher**, *Google*, Mountain View, CA, US (remote)  
Worked with Sugato Basu and Garima Pruthi in the AdsAI team (led by Sugato Basu) on Causal Representation Learning, ML Security, and Self-Supervised Learning.
- 12/2016–8/2018 **Postdoctoral Associate**, *Carnegie Mellon University*, Pittsburgh, US  
Worked with Christian Kästner (postdoc advisor) on performance analysis of highly configurable software, collaborated very closely with Norbert Siegmund. Worked with David Garlan on meta-learning for self-adaptive systems. Involved in BRASS MARS, a DARPA-sponsored project, developed transfer learning methods for enabling runtime adaptations of mobile robotics in dynamic environments.
- 2/2015–12/2016 **Postdoctoral Associate**, *Imperial College London*, London, UK  
Worked on the theory of uncertainty estimation and Bayesian optimization and applied it to performance auto-tuning of big-data systems. Involved in two EU projects (DICE and MODAClouds), where I developed tools for auto-tuning Apache Hadoop and Storm.
- 9/2014–2/2015 **Postdoc**, *Dublin City University*, Dublin, Ireland  
Worked with Claus Pahl on developing self-learning controllers at IC4 cloud center and in collaboration with Intel (Giovani Estrada) and Microsoft (Niall Moran).
- 9/2010–9/2014 **Ph.D. Research Assistant**, *Dublin City University*, Dublin, Ireland  
Worked with Claus Pahl (Ph.D. advisor) on developing a cloud controller for auto-scaling in the cloud. I received a scholarship from Lero (the Irish Software Research Centre).

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## EDUCATION

- 9/2010–9/2014 **Ph.D., Computer Science**, *Dublin City University*, Ireland
- Thesis: *A framework for robust control of uncertainty in self-adaptive software*
  - Adviser: Prof. Claus Pahl, External examiner: Prof. Pete Sawyer (Lancaster)
- 9/2003–2/2006 **M.Sc., Industrial Engineering (Systems)**, *Amirkabir University of Technology*, Iran
- Thesis: *An integrated knowledge-based system for product design support*
  - Adviser: Dr. Saeed Mansour
- 9/1999–9/2003 **B.A., Math & Computer Science**, *Amirkabir University of Technology*, Iran

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## PROFESSIONAL EXPERIENCE: PRE PH.D.

- 7/2008–9/2010 **Research Team Lead (part-time)**, *Shahid Beheshti University*, Tehran, Iran  
Led the Automated Software Engineering team in a research lab (Lab Director: Dr. Fereidoon Shams); I have developed and contributed to the development of methods and tools for automating some processes in building distributed systems with service-oriented architectures.
- 2007–2010 **Project Manager**, *Negaran Co*, Tehran, Iran  
Managed a large-scale software project on developing a distributed software system automating business processes in a charity organization that has offices in many cities. My team included 20-30 software engineers and designers. Technologies: .NET, Microsoft SQL Server, SOA compatible stacks.
- 2006–2007 **Software Architect**, *Negaran Co*, Tehran, Iran  
Developed the enterprise architecture and prepared the ICT business planning using IBM's Business Systems Planning (BSP) and the Zachman Framework. Designed the software architecture of the core systems using an extended ADL in Visual Paradigm.
- 2003–2006 **Software Engineer**, *Rayan Pardaz Kavosh*, Tehran, Iran  
Developed server-side software, and designed finance and automation software systems. Added several new features to the code base of a manufacturing automation system. Technologies: Visual C++, COM/CORBA, Socket programming

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## HONORS AND AWARDS

- SEAMS MIP SEAMS's Most Influential Paper award for our SEAMS 2014 paper [C9].
- UofSC's Breakthrough Stars University of South Carolina's 2022 **Breakthrough Stars Award**. [https://sc.edu/uofsc/posts/2022/06/breakthrough\\_star\\_pooyan\\_jamshidi.php](https://sc.edu/uofsc/posts/2022/06/breakthrough_star_pooyan_jamshidi.php)
- Junior Researcher Award Computer Science and Engineering Department's **Junior Researcher Award**, University of South Carolina, 2020. <https://cse.sc.edu/news/news/departmental-awards>
- Distinguished Reviewer ACM TOSEM Board of **Distinguished Reviewers**, August 2020. <https://dl.acm.org/journal/tosem/distinguished-reviewers-board>
- Competition Selected as one of the two **finalists** at DCU for a fully funded research visit to IBM Research Brazil, 2014.
- Competition Thesis in 3 **national finalists**, "I bet you didn't know that software can adapt itself on-the-fly", Ireland, 2013, <https://goo.gl/igfKYC>
- Ph.D. Fellowship Awarded Lero Graduate School in Software Engineering (LGSSE) scholarship on the structured Ph.D. in Software Engineering, 2010-2013, **\$85,000**.

Iranian University Ranked **21<sup>nd</sup>** in the national graduate-level exam among 20,000 participants,  
Entrance Exam 2003.














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



## PUBLICATIONS

Key publications are indicated with ★ and top venues are marked with **bold** fonts. 🌐 <http://scholar.google.com/citations?user=41rV5koAAAAJ>

### REFEREED JOURNAL ARTICLES

- ★**TMLR** [J33] H. KhademSohi, M. Abedi, Y. Ioannou, S. Drew, P. Jamshidi, H. Hemmati, *Improving Efficiency of Neural Image Classification and Object Detection Systems using Automated Layer Caching*, Transactions on Machine Learning Research (TMLR), 2024. [revision]
- ★**JSys** [J32] S. Ghafouri, K. Razavi, M. Salmani, A. Sanaee, T. Lorida-Botran, L. Wang, J. Doyle, P. Jamshidi, *IPA: Inference Pipeline Adaptation to Achieve High Accuracy and Cost-Efficiency*, Journal of Systems Research (JSys), 2023. [revision]
- ★**TOSEM** [J31] V. Cortellessa, J.A. Diaz-Pace, D. Di Pompeo, S. Frank, P. Jamshidi, M. Tucci, A. van Hoorn, *Introducing Interactions in Multi-Objective Optimization of Software Architectures*, ACM Transactions on Software Engineering and Methodology (TOSEM), 2023. [revision]
- ★**JAIR** [J30] M.A. Javidian, O. Pandey, P. Jamshidi, *Scalable Causal Transfer Learning*, Journal of Artificial Intelligence Research (JAIR), 2023. [revision]
- ★**RA-L** [J29] A. Hossen, S. Kharade, B. Schmerl, J. Cámara, J. M. O’Kane, E. C. Czaplinski, K. A. Dzurilla, D. Garlan, P. Jamshidi, *CaRE: Finding Root Causes of Configuration Issues in Highly-Configurable Robots*, IEEE Robotics and Automation Letters (RA-L), 2023 (Also appearing at IROS’23).
- ★**JAIR** [J28] S. Iqbal, J. Su, L. Kotthoff, P. Jamshidi, *FlexiBO: Cost-Aware Multi-Objective Optimization of Deep Neural Networks*, Journal of Artificial Intelligence Research (JAIR), 2023.
- ★**JAIR** [J27] M. Javidian, M. Valtorta, P. Jamshidi, *AMP Chain Graphs: Minimal Separators and Structure Learning Algorithms*, Journal of Artificial Intelligence Research (JAIR), 2020. 🌐 doi:10.1613/jair.1.12101 [SJR rating: **Q1**]
- PCCP** [J26] K. McCullough, T. Williams, K. Mingle, P. Jamshidi, J. Lauterbach, *High-throughput Experimentation meets Artificial Intelligence: A New Pathway to Catalyst Discovery*, Physical Chemistry Chemical Physics (PCCP), 2020. 🌐 doi:10.1039/D0CP00972E [SJR rating: **Q1**]
- ★**ASE** [J25] M. Velez, P. Jamshidi, F. Sattler, N. Siegmund, S. Apel, C. Kaestner, *ConfigCrusher: White-Box Performance Analysis for Configurable Systems*, Springer Automated Software Engineering, 2020. 🌐 doi:10.1007/s10515-020-00273-8 [SJR rating: **Q1**]
- IEEE TSE** [J24] R. Krishna, V. Nair, P. Jamshidi, T. Menzies, *Whence to Learn? Transferring Knowledge in Configurable Systems using BEETLE*, IEEE Transactions on Software Engineering (TSE), 2020. 🌐 doi:10.1109/TSE.2020.2983927 [SJR rating: **Q1**]
- ★**IEEE SOFTWARE** [J23] N. C Mendonça, P. Jamshidi, D. Garlan, and C. Pahl, *Developing Self-Adaptive Microservice Systems: Challenges and Directions*, IEEE Software, 2019. [SJR rating: **Q1**]
- IEEE SOFTWARE** [J22] J. Aldrich, J. Biswas, J. Camáara, D. Garlan, A. Guha, J. Holtz, P. Jamshidi, C. Kaestner, C. Le Goues, A. Mohseni-Kabir, I. Ruchkin, S. Samuel, B. Schmerl, C. Steven Timperley, M. Veloso, and I. Voysey, *Model-based Adaptation for Robotics Software*, IEEE Software, 2019. [SJR rating: **Q1**]

- SPRINGER JBD [J21] M. Bersani, F. Marconi, D. Tamburri, A. Nodari, P. Jamshidi, *Verifying big data topologies by-design: a semi-automated approach*, Journal of Big Data, 2019.  doi:10.1186/s40537-019-0199-y [SJR rating: **Q1**]
- IEEE SOFTWARE [J20] C. Trubiani, P. Jamshidi, J. Cito, W. Shang, Z.M. Jiang, M. Borg, *Performance issues? Hey DevOps, mind the uncertainty!*, IEEE Software, 2018. [SJR rating: **Q1**]
- IEEE SOFTWARE [J19] **Featured Article** P. Jamshidi, C. Pahl, N. Mendonça, J. Lewis, S. Tilkov, *Microservices: The Journey So Far and Challenges Ahead*, IEEE Software, 2018.  doi:10.1109/MS.2018.2141039, [SJR rating: **Q1**]
- WILEY SPE [J18] A. Balalaie, A. Heydarnoori, P. Jamshidi, D.A. Tamburri, T. Lynn, *Microservices migration patterns*, Wiley Software: Practice and Experience (SPE), 2018.  doi:10.1002/spe.2608 [SJR rating: **Q2**]
- ELSEVIER JSS [J17] A. Aleti, C. Trubiani, A. van Hoorn, P. Jamshidi, *An Efficient Method for Uncertainty Propagation in Robust Software Performance Estimation*, Elsevier Journal of Systems and Software (JSS), 2018.  doi:10.1016/j.jss.2018.01.010 [SJR rating: **Q1**]
- ACM TOIT [J16] C. Pahl, P. Jamshidi, O. Zimmermann, *Architectural Principles for Cloud Software*, ACM Transactions on Internet Technology (TOIT), 18(2), 2018.  doi:10.1145/3104028 [SJR rating: **Q1**]
- IEEE TCC [J15] C. Pahl, A. Brogi, J. Soldani, P. Jamshidi, *Cloud Container Technologies: a State-of-the-Art Review*, IEEE Transactions on Cloud Computing (TCC). 2017  doi:10.1109/TCC.2017.2702586. [SJR rating: **Q1**]
- WILEY JSEP [J14] C Pahl, P. Jamshidi, D Weyns, *Cloud architecture continuity: Change models and change rules for sustainable cloud software architectures*, Wiley Journal of Software: Evolution and Process (JSEP), 29(2), 2017  doi:10.1002/smr.1849. [SJR rating: **Q2**]
- ACM TAAS [J13] **Invited** A. Filieri, M. Maggio, K. Angelopoulos, N. D'Ippolito, I. Gerostathopoulos, A. Hempel, H. Hoffmann, P. Jamshidi, E. Kalyvianaki, C. Klein, F. Krikava, S. Misailovic, A. V. Papadopoulos, S. Ray, A. M. Sharifloo, S. Shevtsov, M. Ujma and T. Vogel, *Control Strategies for Self-Adaptive Software Systems*, ACM Transactions on Autonomous and Adaptive Systems (TAAS), invited paper, 11(4), 2017,  doi:10.1145/3024188. [SJR rating: **Q1**]
- IEEE CLOUD [J12] P. Jamshidi, C. Pahl, N. Mendonça, *Managing Uncertainty in Autonomic Cloud Elasticity Controllers*, IEEE Cloud Computing, 2016.  doi:10.1109/MCC.2016.66
- IEEE SOFTWARE [J11] **Featured Article** A. Balalaie, A. Heydarnoori, P. Jamshidi, *Microservices Enables DevOps: an Experience Report on Migration to a Cloud-Native Architecture*, IEEE Software, 2016.  doi:10.1109/MS.2016.64, [SJR rating: **Q1**]
- IEEE TCC [J10] F. Fowley, C. Pahl, P. Jamshidi, D. Fang, X. Liu, *A Classification and Comparison Framework for Cloud Service Brokerage Architectures*, IEEE Transactions on Cloud Computing (TCC), 2016,  doi:10.1109/TCC.2016.2537333. [SJR rating: **Q1**]
- WILEY SPE [J9] P. Jamshidi, C. Pahl, N. C. Mendonça, *Pattern-based Multi-Cloud Architecture Migration*, Wiley Software: Practice and Experience (SPE), 47(9), 1159-1184, 2016.  doi:10.1002/spe.2442 [SJR rating: **Q2**]
- ★ ELSEVIER FGCS [J8] S. Farokhi, P. Jamshidi, E. B. Lakew, I. Brandic, E. Elmroth, *A Hybrid Cloud Controller for Vertical Memory Elasticity: A Control-theoretic Approach*, Elsevier Future Generation Computer Systems (FGCS), 65, 57 – 72 (2016).  doi:10.1016/j.future.2016.05.028, [SJR rating: **Q1**]

- ELSEVIER FGCS [J7] D. Fang, X. Liu, I. Romdhani, P. Jamshidi, C. Pahl, *An Agility-Oriented and Fuzziness-Embedded Semantic Model for Collaborative Cloud Service Search, Retrieval and Recommendation*, Elsevier Future Generation Computer Systems (FGCS), 56, 11 – 26 (2016).  doi:10.1016/j.future.2015.09.025, [SJR rating: **Q1**]
- IEEE TCC [J6] **Featured Article** P. Jamshidi, A. Ahmad, C. Pahl, *Cloud Migration Research: A Systematic Review*, IEEE Transactions on Cloud Computing (TCC), 1(2), 142 – 157 (2013).  doi:10.1109/TCC.2013.10, [SJR rating: **Q1**]
- SPRINGER JSEP [J5] A. Ahmad, P. Jamshidi, C. Pahl, *Classification and Comparison of Architecture Evolution Reuse Knowledge - A Systematic Review*, Springer Journal of Software: Evolution and Process (JSEP), 26(7): 654–691 (2014).  doi:10.1002/smr.1643, [SJR rating: **Q2**]
- EASST [J4] A. Ahmad, P. Jamshidi, C. Pahl, F. Khaliq, *A Pattern Language for the Evolution of Component-based Software Architectures*, Electronic Communications of the EASST, 59, 1 – 32 (2014).  doi:10.14279/tuj.eceasst.59.931
- IEEE SYSTEMS [J3] A. Khoshkbarforoushha, P. Jamshidi, M. Fahmideh, L. Wang, R. Ranjan, *Metrics for BPEL Process Reusability Analysis in a Workflow System*, IEEE Systems Journal, 1 – 10 (2014).  doi:10.1109/JSYST.2014.2317310, [SJR rating: **Q1**]
- SPRINGER SOSYM [J2] M. Fahmideh, M. Sharifi, P. Jamshidi, *Enhancing the OPEN Process Framework with Service-Oriented Method Fragments*, Springer Software and Systems Modeling (SoSym), 13(1): 361 – 390 (2014).  doi:10.1007/s10270-011-0222-z, [SJR rating: **Q1**]
- SPRINGER SOCA [J1] A. Khoshkbarforoushha, P. Jamshidi, A. Nikraves, F. Shams, *Metrics for BPEL process context-independency analysis*, Springer Service Oriented Computing and Applications (SOCA), 5(3): 139 – 157 (2011).  doi:10.1007/s11761-011-0077-8, [SJR rating: **Q2**]

## REFEREED CONFERENCE PAPERS

- ★SoCC [C44] M.S. Iqbal, Z. Zhong, I. Ahmad, B. Ray, P. Jamshidi, *CAMEO: A Causal Transfer Learning Approach for Performance Optimization of Configurable Computer Systems.*, In Proc. of ACM Symposium on Cloud Computing (SoCC'23), 2023 [Acceptance rate: 29%(29/100); CORE rating: rank **A\***].
- ADVML- FRONTIERS [C43] F. Ghofrani, M. Yaghouti, P. Jamshidi, *Rethinking Robust Contrastive Learning from the Adversarial Perspective*, In Proc. of the 2nd New Frontiers in Adversarial Machine Learning (AdvML Frontiers at ICML'23), 2023.
- ★EUROMLSYS [C42] M. Salmani, S. Ghafouri, A. Sanaee, K. Razavi, M. Mühlhäuser, J. Doyle, P. Jamshidi, M. Sharifi, *Reconciling High Accuracy, Cost-Efficiency, and Low Latency of Inference Serving Systems*, In Proc. of Proceedings of the 3rd Workshop on Machine Learning and Systems (EuroMLSys), 2023.
- CLOUD [C41] A. Mokhtari, A. Hossen, P. Jamshidi, M. Amini Salehi, *FELARE: Fair Scheduling of Machine Learning Applications on Heterogeneous Edge Systems*, In Proc. of International Conference on Cloud Computing (IEEE CLOUD), 2022 [Acceptance rate: 20%].
- ★AUTOML [C40] S. Iqbal, J. Su, L. Kotthoff, P. Jamshidi, *Getting the Best Bang For Your Buck: Choosing What to Evaluate for Faster Bayesian Optimization*, International Conference on Automated Machine Learning (AutoML), 2022.
- ★EuroSys [C39] S. Iqbal, R. Krishna, M.A. Javidian, B. Ray, P. Jamshidi, *Unicorn: Reasoning about Configurable System Performance through the lens of Causality*, In Proc. of European Conference on Computer Systems (EuroSys), 2022 [Acceptance rate: 25%(42/162); CORE rating: rank **A\***].
- ★ARXIV [C38] Kimia Noorbakhsh, Modar Sulaiman, Mahdi Sharifi, Kallol Roy, P. Jamshidi, *Pretrained Language Models are Symbolic Mathematics Solvers too!*, [under review, available on arxiv].
- ★ICSE [C37] M. Velez, P. Jamshidi, N. Siegmund, S. Apel, C. Kaestner, *On Debugging the Performance of Configurable Software Systems: Developer Needs and Tailored Tool Support*, In Proc. of International Conference on Software Engineering (ICSE), 2022 [Acceptance rate: 26%(197/751); CORE rating: rank **A\***].
- ★NEURIPS WHY-21 [C36] M.A. Javidian, O. Pandey, P. Jamshidi, *Scalable Causal Domain Adaptation*, In Proc. NeurIPS WHY-21 (Causal Inference and Machine Learning: Why now?), 2021 [Invited for oral presentation; Acceptance rate: 8%(4/50)].
- ★ICSE [C35] M. Velez, P. Jamshidi, N. Siegmund, S. Apel, C. Kaestner, *White-Box Analysis over Machine Learning: Modeling Performance of Configurable Systems*, In Proc. of International Conference on Software Engineering (ICSE), Virtual (May 2021) [Acceptance rate: 23%(138/602); CORE rating: rank **A\***].
- AAMAS [C34] M. Rahman, A. Rasheed, M. Khan, M.A. Javidian, P. Jamshidi, Md. Mamun-Or-Rashid, *Accelerating Recursive Partition-Based Causal Structure Learning Using An Improved Structure Refinement Approach*, In Proc. of International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Virtual (May 2021) [Acceptance rate: 25%(152/612); CORE rating: rank **A\***].
- NEURIPS ML FOR SYSTEMS [C33] S. Iqbal, R. Krishna, M.A. Javidian, B. Ray, P. Jamshidi, *CADET: A Systematic Method For Debugging Misconfigurations using Counterfactual Reasoning*, In Proc. of NeurIPS ML for Systems, Virtual (December 2020).

- PROFES [C32] A. Banijamali, P. Kuvaja, M. Oivo, P. Jamshidi, *Kuksa\*: Self-adaptive Microservices in Automotive Systems*, In Proc. of International Conference on Product-Focused Software Process Improvement (PROFES), Virtual (November 2020).
- ★UAI [C31] M. Javidian, M. Valtorta, P. Jamshidi, *Learning LWF Chain Graphs: A Markov Blanket Discovery Approach*, In Proc. of The Conference on Uncertainty in Artificial Intelligence (UAI), Toronto, Canada (August 2020) [Acceptance rate: 27%(142/515); CORE rating: rank **A\***].
- SUM [C30] M. Javidian, M. Valtorta, P. Jamshidi, *Order-Independent Structure Learning of Multivariate Regression Chain Graphs*, In Proc. of International Conference on Scalable Uncertainty Management (SUM), Compiègne, France (December 2019).
- PROFES [C29] A. Banijamali, P. Jamshidi, P. Kuvaja, and M. Oivo, *Kuksa: A Cloud-Native Architecture for Enabling Continuous Delivery in the Automotive Domain*, In Proc. of International Conference on Product-Focused Software Process Improvement (PROFES), Barcelona, Spain (November 2019).
- ICGSE [C28] M. Vigiato, J. Oliveira, E. Figueiredo, P. Jamshidi, and C. Kaestner, *Understanding similarities and differences in software development practices across domains*, In Proc. of International Conference on Global Software Engineering (ICGSE), Montreal, Canada, (May 2019).
- ICPE [C27] C. Bezemer, S. Eismann, V. Ferme, J. Grohmann, R. Heinrich, P. Jamshidi, W. Shang, A. van Hoorn, M. Villavicencio, J. Walter, and F. Willnecker, *How is Performance Addressed in DevOps?*, In Proc. of International Conference on Performance Engineering (ICPE), Mumbai, India, (April 2019).
- OPML [C26] M. S. Iqbal, L. Kotthoff, P. Jamshidi, *Transfer Learning for Performance Modeling of Deep Neural Network Systems*, In Proc. of the USENIX Conference on Operational Machine Learning (OpML), Santa Clara, CA, (May 2019).
- ★SEAMS [C25] P. Jamshidi, J. Camara, B. Schmerl, C. Kästner, D. Garlan, *Machine Learning Meets Quantitative Planning: Enabling Self-Adaptation in Autonomous Robots*, In Proc. of the 12th International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS), Montreal, Canada, (May 2019) [Acceptance rate: 28%(10/36); CORE rating: rank **A**].
- AAAI WHY-19 [C24] M. A. Javidian, P. Jamshidi, M. Valtorta, *Transfer Learning for Performance Modeling of Configurable Systems: A Causal Analysis*, In Proc. of AAAI Spring Symposium Beyond Curve Fitting: Causation, Counterfactuals, and Imagination-based AI (WHY-19), Stanford, CA, USA, (March 2019).
- AAMAS [C23] M. A. Javidian, P. Jamshidi, R. Ramezani, *Avoiding Social Disappointment in Elections*, In Proc. of International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Montreal, Canada, (May 2019). [CORE rating: rank **A\***].
- FSE [C22] P. Jamshidi, M. Velez, C. Kästner, N. Siegmund, *Learning to Sample: Exploiting Similarities Across Environments to Learn Performance Models for Configurable Systems*, In Proc. of the ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE), Florida, USA, (Nov 2018) [Acceptance rate: 19%(55/295); CORE rating: rank **A\***].
- TECHDEBT [C21] A. Mori, G. Vale, M. Vigiato, J. Oliveira, E. Figueiredo, E. Cirilo, P. Jamshidi, and C. Kästner, *Evaluating Domain-Specific Metric Thresholds: An Empirical Study*, In Proc. of the International Conference on Technical Debt (TechDebt), Gothenburg, Sweden, (May 27-28, 2018).



- ★ASE [C20] P. Jamshidi, N. Siegmund, M. Velez, C. Kästner, A. Patel, Y. Agarwal, *Transfer Learning for Performance Modeling of Configurable Systems: An Exploratory Analysis*, In Proc. of the 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE), Illinois, USA, (Nov 2017) [Acceptance rate: 21%(67/322); CORE rating: rank **A**\*].
- ★SEAMS [C19] P. Jamshidi, M. Velez, C. Kästner, N. Siegmund, P. Kawthekar, *Transfer Learning for Improving Model Predictions in Highly Configurable Software*, In Proc. of the 12th International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS), Buenos Aires, Argentina, (May 2017) [Acceptance rate: 23% (14/61), [Invited for an extension to ACM TAAS](#)]. CORE rating: rank **A**].
- CCGRID [C18] H. Arabnejad, C. Pahl, P. Jamshidi, G. Estrada, *A Comparison of Reinforcement Learning Techniques for Fuzzy Cloud Auto-Scaling*, in Proc. of The 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Madrid, Spain, (May 2017) [Acceptance rate: 23% (64/280); CORE rating: rank **A**]. **Nominated for the best paper award.**
- WICSA [C17] M. Bersani, F. Marconi, D. Tamburri, P. Jamshidi, A. Nodari, *Continuous Architecting of Stream-Based Systems*, In Proc. of The 13th Working IEEE/IFIP Conference on Software Architecture (WICSA), Venice, Italy, (April 2016). [Acceptance rate: 37% (56/149); CORE rating: rank **A**]
- ★MASCOTS [C16] P. Jamshidi, G. Casale, *An Uncertainty-Aware Approach to Optimal Configuration of Stream Processing Systems*, In Proc. of IEEE 24th International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS), London, UK (September 2016). [Acceptance rate: 17% (34/200); CORE rating: rank **A**]
- ★QoSA [C15] P. Jamshidi, A. Sharifloo, C. Pahl, H. Arabnejad, A. Metzger, G. Estrada, *Fuzzy Self-Learning Controllers for Elasticity Management in Dynamic Cloud Architectures*, In Proc. of 12th International ACM SIGSOFT Conference on the Quality of Software Architectures (QoSA), Venice, Italy, (April 2016). [CORE rating: rank **A**]
- ICCAC [C14] P. Jamshidi, A. Sharifloo, C. Pahl, A. Metzger, G. Estrada, *Self-Learning Cloud Controllers: Fuzzy Q-Learning for Knowledge Evolution*, In Proc. of IEEE International Conference on Cloud and Autonomic Computing (ICCAC), Boston, MA, USA, (Sept. 2015).
- ICAC [C13] Soodeh Farokhi, P. Jamshidi, D. Lucanin, I. Brandic, *Performance-Based Vertical Memory Elasticity*, In Proc. of IEEE International Conference on Autonomic Computing (ICAC), Grenoble, France, (Jul. 2015).
- ECSA [C12] C. Pahl, P. Jamshidi, *Software Architecture for the Cloud - A Roadmap Towards Control-Theoretic, Model-Based Cloud Architecture*, In Proc. of Springer European Conference on Software Architecture (ECSA), (Sept. 2015). [CORE rating: rank **A**]
- SEAMS [C11] A. Filieri, M. Maggio, K. Angelopoulos, N. D'Ippolito, I. Gerostathopoulos, A. Hempel, **Invited** H. Hoffmann, P. Jamshidi, E. Kalyvianaki, C. Klein, F. Krikava, S. Misailovic, A. V. Papadopoulos, S. Ray, A. M. Sharifloo, S. Shevtsov, M. Ujma and T. Vogel, *Software Engineering Meets Control Theory*, In Proc. of the 10th ACM International Symposium on Software Engineering for Adaptive and Self-Managing Systems, Firenze, Italy, (May 2015), [Acceptance rate: 29% (16/55); CORE rating: rank **A**]

- UCC [C10] L. Zhang, Y. Zhang, P. Jamshidi, L. Xu, C. Pahl, *Workload Patterns for Quality-Driven Dynamic Cloud Service Configuration and Auto-Scaling*, In Proc. of IEEE/ACM 7th International Conference on Utility and Cloud Computing (UCC), London, UK, (Dec 2014), [Acceptance rate: 19% (38/198); CORE rating: rank **A**]
- Most Influential Paper Award**
- SEAMS [C9] P. Jamshidi, A. Ahmad, C. Pahl, *Autonomic Resource Provisioning for Cloud-Based Software*, In Proc. of the 9th ACM International Symposium on Software Engineering for Adaptive and Self-Managing Systems, Hyderabad, India, (Jun. 2014), [Acceptance rate= 18% (15/80); CORE rating: rank **A**].
- CSMR [C8] P. Jamshidi, M. Ghafari, A. Ahmad, C. Pahl, *A Framework for Classifying and Comparing Architecture-Centric Software Evolution Research*, In Proc. of 17th European Conference on Software Maintenance and Reengineering (CSMR), Genova, Italy, (Mar. 2013), [Acceptance rate: 36% (29/80)]
- CBSE [C7] M. Ghafari, P. Jamshidi, S. Shahbazi, H. Haghghi, *An architectural approach to ensure globally consistent dynamic reconfiguration of component-based systems*, In Proc. of the 15th ACM SIGSOFT symposium on Component-Based Software Engineering (CBSE), Bertinoro, Ital, (Sept. 2012). [Acceptance rate: 29%; CORE rating: rank **A**]
- CAiSE [C6] A. Ahmad, P. Jamshidi, C. Pahl, *Graph-Based Pattern Identification from Architecture Change Logs*, In Proc. of Springer International Conference on Advanced Information Systems Engineering (CAiSE), (Jun. 2012). [Short Paper, CORE rating: rank **A**]
- QSIC [C5] A. Kazemi, A. Rostampour, A. Zamiri, P. Jamshidi, H. Haghghi, F. Shams, *An Information Retrieval Based Approach for Measuring Service Conceptual Cohesion*, In Proc. of 11th IEEE International Conference on Quality Software (QSIC), Madrid, Spain, (Jul. 2011). [Acceptance rate: 17.6%]
- SCC [C4] A. Kazemi, A. Nasirzadeh, A. Rostampour, H. Haghghi, P. Jamshidi, F. Shams, *Measuring the Conceptual Coupling of Services Using Latent Semantic Indexing*, In Proc. of IEEE International Conference on Services Computing (SCC), Washington, DC, USA, (Jul. 2011). [Acceptance rate: 17%; CORE rating: rank **A**]
- SERVICES [C3] A. Kazemi, A. Rostampour, P. Jamshidi, E. Nazemi, F. Shams, A. Nasirzadeh, *A Genetic Algorithm Based Approach to Service Identification*, In Proc. of IEEE World Congress on Services (SERVICES), Washington, DC, USA, (Jul. 2011). [Acceptance rate: 17%; CORE rating: rank **A**]
- SERVICES [C2] A. Khoshkbarforousha, R. Tabein, P. Jamshidi, F. Shams, *Towards a metrics suite for measuring composite service granularity level appropriateness*, In Proc. of IEEE World Congress on Services (SERVICES), Miami, FL, USA, (Jul. 2010). [Acceptance rate: 18% (29/165)]
- SCC [C1] P. Jamshidi, M. Sharifi, S. Mansour, *To Establish Enterprise Service Model from Enterprise Business Model*, in Proc. of IEEE International Conference on Services Computing (SCC), Honolulu, HI, USA, (Jul. 2008). [Acceptance rate: 18%; CORE rating: rank **A**]

- ECASE [W15] C. M. Aderaldo, N. C. Mendonca, C. Pahl, P. Jamshidi, *Benchmark requirements for microservices architecture research*, in Proc. of ECASE (co-located with ICSE 2017), (May 2017), IEEE.
- QUDOS [W14] E. Di Nitto, P. Jamshidi, M. Guerriero, I. Spais, D. A. Tamburri, *A software architecture framework for quality-aware DevOps*, in Proc. of QUDOS (co-located with ISSA 2016), (July 2016), ACM.
- CLOUDWAY [W13] A. Balalaie, A. Heydarnoori, P. Jamshidi, *Migrating to Cloud-Native Architectures Using Microservices: An Experience Report*, in Proc. of CloudWay (co-located with ESOC 2015), (Jul. 2015), Springer.
- QUDOS [W12] T. Ustinova, P. Jamshidi, *Modelling Multi-tier Enterprise Applications Behaviour with Design of Experiments Technique*, in Proc. of QUDOS (co-located with ESEC/FSE 2015), (Sept. 2015), ACM.
- FC [W11] S. Farokhi, P. Jamshidi, I. Brandic, E. Elmroth, *Self-adaptation Challenges for Cloud-based Applications: A Control Theoretic Perspective*, in Proc. of FC (co-located with CPSWeek 2015), (Apr. 2015), ACM.
- WESOA [W10] P. Jamshidi, C. Pahl, S. Chinenyeze, X. Liu, *Cloud Migration Patterns: A Multi-Cloud Service Architecture Perspective*, in Proc. of WESOA (co-located with ICSOC 2014), (Oct. 2014), Springer.
- SEACLOUDS [W9] P. Jamshidi, C. Pahl, *Orthogonal Variability Modeling to Support Multi-cloud Application Configuration*, in Proc. of SEACLOUDS (co-located with ESOC 2014), (Sept. 2014), Springer.
- PPAP [W8] A. Ahmad, P. Jamshidi, C. Pahl, *PatEvol - A pattern language for evolution in component-based software architectures*, in Proc. of PPAP (co-located with CSMR 2013), (Mar.. 2013), IEEE.
- PERCOM [W7] S. Djahel, M. Salehie, I. Tal, P. Jamshidi, *Adaptive Traffic Management for Secure and Efficient Emergency Services in Smart Cities*, in Proc. of PerCom, (Mar. 2013), IEEE.
- SHARK [W6] A. Ahmad, P. Jamshidi, M. Arshad, C. Pahl, *Graph-based implicit knowledge discovery from architecture change logs*, in Proc. of SHARK (co-located with WICSA/ECSA 2012), (Aug. 2012), IEEE.
- MISE [W5] P. Jamshidi, C. Pahl, *Business process and software architecture model co-evolution patterns*, in Proc. of MiSE (co-located with ICSE 2012), (Jun. 2012), ACM.
- WETSOM [W4] A. Khoshkbarforousha, P. Jamshidi, F. Shams, *A Metric for Composite Service Reusability Analysis*, in Proc. of WETSOM (co-located with ICSE 2010), (May 2010), ACM.
- PESOS [W3] P. Jamshidi, S. Khoshnevis, R. Teimourzadegan, A. Nikravesh, F. Shams, *Toward Automatic Transformation of Enterprise Business Model to Service Model*, in Proc. of WETSOM (co-located with ICSE 2009), (May 2009), ACM.
- MESOA [W2] S. Khoshnevis, P. Jamshidi, A. Nikravesh, A. Khoshkbarforousha, R. Teimourzadegan, F. Shams, *ASMEM: A Method for Automating Model Evolution of Service-Oriented Systems*, in Proc. of MESOA (co-located with ICSM 2009), (Sept. 2009), SEI.

- WUP [W1] P. Jamshidi, S. Khoshnevis, R. Teymourzadegan, A. Nikravesh, F. Shams, *An Automated Method for Service Specification*, in Proc. of WUP (co-located with ICSE 2010), (Sept. 2009), ACM.

## TECHNICAL REPORTS













- SE4ROBOTICS [TR6] CL. Goues, S. Elbaum, D. Anthony, C. Berkay, M. Castillo-Effen, N. Correll, P. Jamshidi, M. Quigley, T. Tabor, and Q. Zhu, *Software Engineering for Robotics: Future Research Directions*, 2023 Workshop on Software Engineering for Robotics (SE4Robotics at IROS'23), 2024.
- RAP4ROBOTS [TR5] H. Damirchi, F. Agostinelli, P. Jamshidi, *Independent Modular Networks*, In Proc. of Workshop on Effective Representations, Abstractions, and Priors for Robot Learning (RAP4Robots at ICRA'23), 2023.
- ARXIV [TR4] AM. Roth, N. Topin, P. Jamshidi, M. Veloso, *Conservative Q-improvement: Reinforcement learning for an interpretable decision-tree policy*, Arxiv, (2019).
- FC [TR3] S. Farokhi, P. Jamshidi, I. Brandic, E. Elmroth, *Self-adaptation Challenges for Cloud-based Applications: A Control Theoretic Perspective*, International Workshop on Feedback Computing, (2015).
- DAGSTUHL [TR2] A. van Hoorn, P. Jamshidi, P. Leitner, I. Weber, *Software Performance Engineering in the DevOps World*, Report from GI-Dagstuhl Seminar 16394, (Sept. 2017), <https://arxiv.org/abs/1709.08951>.
- SPEC [TR1] A. Brunnert, A. van Hoorn, F. Willnecker, A. Danciu, Wi. Hasselbring, C. Heger, N. Herbst, P. Jamshidi, R. Jung, J. von Kistowski, A. Koziolk, J. Kroß, S. Spinner, C. Vögele, J. Walter, A. Wert, *Performance-oriented DevOps: A Research Agenda*, SPEC Research Group — DevOps Performance Working Group, Standard Performance Evaluation Corporation (SPEC), (Aug. 2015), SPEC-RG-2015-01.

## PATENTS

- SYNTHEANA [P1] B. Srivastava, Y. Meng, J. Su, J.M. O’Kane, P. Jamshidi, *System and Method for Synthesizing Dynamic Ensemble-Based Defenses to Counter Adversarial Attacks*, US Patent App. 17/487,502. <https://patents.google.com/patent/US20220171848A1/en>

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## SOFTWARE ARTIFACTS

- GitHub Almost all listed software is developed collaboratively (LD: lead developer; CC: contributor). AISys GitHub Organization; My personal GitHub Account; We also actively maintain several GitHub Organizations associated with our major projects, please find the links on my homepage.
- CC [S17] **Unicorn**, *Unicorn is a framework for reasoning about system performance using Causal AI*, Python,  <https://github.com/softsys4ai/unicorn>
- ★CC [S17] **ATHENA**, *is a Framework for defending machine learning systems against adversarial attacks*, Python,  <https://github.com/softsys4ai/athena>
- LD [S16] **robot\_control**, *robot\_control is a set of controllers and actuators that run, control, and interface the ROS-enabled robots, as a part of DARPA BRASS project.*, C++,  [https://github.com/pooyanjamshidi/robot\\_control](https://github.com/pooyanjamshidi/robot_control)
- LD [S15] **brass\_gazebo\_battery**, *brass\_gazebo\_battery is a Gazebo plugin that simulates an open-circuit battery model. This is a fairly extensible and reusable battery plugin for any kind of Gazebo-compatible robots.*, C++,  [https://github.com/pooyanjamshidi/brass\\_gazebo\\_battery](https://github.com/pooyanjamshidi/brass_gazebo_battery)
- LD [S14] **GenPerf**, *GenPerf uses symbolic regression to synthetically generate target performance influence models with different similarities to the source model. GenPerf is used to generate synthetic data for evaluating our TL approach.*, Python,  <https://github.com/pooyanjamshidi/GenPerf>
- LD [S13] **AutoTL**, *This tool enables an adaptive sampling that learns from multiple exclusive information origins including influential configuration options, their interactions, and performance distribution of the configurable software*, Python,  <https://github.com/pooyanjamshidi/autotl>
- LD [S12] **model-learner**, *This tool enables discovering a black box model using regression models and transfer learning. This was used in the BRASS project to enable battery charge/recharge in a self-adaptive loop*, Python,  <https://github.com/cmu-mars/model-learner>
- LD [S11] **autoscaling-bigdata**, *A library for application level runtime monitoring and runtime change actuators and auto-scaling controllers for Big Data technologies such as Apache Storm, Spark, Hadoop, Matlab+REST APIs*,  <https://github.com/pooyanjamshidi/autoscaling-bigdata>
- LD [S10] **TL4CO**, *A Machine Learning tool for finding the optimum configuration of Big Data systems by transferring the learning from other system versions in DevOps context*, Matlab+Java,  <https://github.com/dice-project/DICE-Configuration-TL4CO>
- ★LD [S9] **BO4CO**, *A Machine Learning tool for finding the optimum configuration of Big Data systems*, Matlab+Python,  <https://github.com/dice-project/DICE-Configuration-B04CO>
- LD [S8] **ElasticBench**, *A cloud application framework to plug-in auto-scaling logic and experimentally evaluate controllers in a feedback control loop on platform as a service environment on Microsoft Azure*, .NET,  <https://github.com/pooyanjamshidi/ElasticBench>
- CC [S7] **spark-suite**, *A suite for automated configuration testing, automated topology deployment and a benchmarking tool for Apache Spark*, Java,  <https://github.com/pooyanjamshidi/spark-suite>

- CC [S6] **OSTIA**, *A parser to elicit and represent Storm topologies by reverse engineering Storm-based programs*, Ruby, 🌐 <https://github.com/maelstromdat/OSTIA>
- LD [S5] **pong-engine**, *An engine that runs pong games on Matlab and paddles are controlled by reinforcement learner agents. I implemented this piece of software for a reinforcement learning course*, Matlab, 🌐 <https://github.com/pooyanjamshidi/pong-engine>
- CC [S4] **MDLoad**, *MDload is a model-driven workload generation tool that automatically generates requests to a web application by simulating a set of users*, Java+Matlab, 🌐 <https://github.com/imperial-modaclouds?query=modaclouds-mdload>
- LD [S3] **Fuzzy-Q-Learning**, *An implementation of Fuzzy Q-Learning for making cloud auto-scaling more intelligent through online policy learning*, Matlab, 🌐 <https://github.com/pooyanjamshidi/Fuzzy-Q-Learning>
- LD [S2] **RobusT2Scale**, *A cloud auto-scaler based on fuzzy reasoning*, Matlab, 🌐 <https://github.com/pooyanjamshidi/RobusT2Scale>
- LD [S1] **ASIM**, *A program that automatically identifies services out of business processes*, Java, 🌐 <https://github.com/pooyanjamshidi/ASIM>

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## DATA

I release the data that I collect for my research to the public community for replication.

- [D3] **ATHENA**, *The dataset (30GB) associated with ATHENA—a framework based on Diverse Weak Defenses for building Adversarial Defense.*, 🌐 <https://zenodo.org/record/4141383>
- [D2] **ASE 2017**, *Transfer Learning for Performance Modeling of Configurable Systems: An Exploratory Analysis*, **Subject systems:** SaC, SQLite, SPEAR, X264, 🌐 <https://github.com/pooyanjamshidi/ase17>
- [D1] **MASCOTS 2016**, *An Uncertainty-Aware Approach to Optimal Configuration of Stream Processing Systems*, **Subject systems:** Apache Storm, Apache Spark, Apache Hadoop, Apache Cassandra, 🌐 <https://zenodo.org/record/56238>

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## FUNDING

- NSF EAGER **“Collaborative Research: EAGER: Towards a Design Methodology for Software-Driven Sustainability”**, Agency: *NSF*, Award Amount: **\$300,000**, Project Period: 09/01/2022 - 08/31/2023  
Role: Co-PI. PI: Eunsuk Kang (Carnegie Mellon University); other co-PIs: Mehdi Mirakhorli and Callie Babbitt (Rochester Institute of Technology).
- NSF MEDIUM **“Collaborative Research: SHF: Medium: Causal Performance Debugging for Highly-Configurable Systems”**, Agency: *NSF*, Award Amount: **\$1,200,000**, Project Period: 10/01/2021 - 09/30/2024  
Role: PI. Co-PIs: Christian Kaestner (CMU) and Baishakhi Ray (Columbia).
- NSF LARGE **“RTG: Mathematical Foundation of Data Science at University of South Carolina”**, Agency: *NSF*, Award Amount: **\$1,996,609**, Project Period: 08/01/2021 - 07/31/2026  
Role: Co-PI. Co-PIs (colleagues in the Math department): Wolfgang Dahmen, Linyuan Lu (PI), Wuchen Li, and Qi Wang.
- NSF SMALL **“SmartSight: an AI-Based Computing Platform to Assist Blind and Visually Impaired People”**, Agency: *NSF*, Award Amount: **\$499,650**, Project Period: 10/01/2020 - 10/01/2023  
Role: PI. Co-PIs: Mohsen Amini Salehi (UL).
- NASA **“RASPBERRY SI: Resource Adaptive Software Purpose-Built for Extraordinary Robotic Research Yields - Science Instruments”**, Agency: *NASA*, Award Amount: **\$300,000**, Project Period: 10/01/2020 - 10/01/2023  
Role: PI. Co-PIs: David Garlan (CMU, co-I), Bradley Schmerl (CMU, co-I), Javier Camara (York, collaborator), Ellen Czaplinski, Katherine Dzurilla (University of Arkansas, consultant), Matt DeMinico (NASA Glenn Research Center, consultant), Mike Dalal (NASA Ames, testbed), Hari Nayyar (NASA JPL, testbed).
- NASA **“A Generic Data-Driven Framework via Physics-Informed Deep Learning”**, Agency: *NASA*, Award Amount: **\$100,000**, Project Period: 08/01/2020 - 08/01/2021  
Role: Co-PI. PI: Lang Yuan (Mechanical Engineering).
- NASA **“Robust Software Testing of Autonomous Aerospace Robotic Systems Using Transfer Learning”**, Agency: *NASA*, Award Amount: **\$50,000** (25,000 cost share), Project Period: 05/07/2019 - 05/06/2020  
Role: PI; Co-PIs: Gregory Gay, Jason O’Kane.
- DARPA-DOD-AFOSR (SUB-AWARD) **“Online Transfer Learning and Self-Adaptation of Robots”**, Agency: *Air Force Office of Science Research (AFOSR) and Defense Advanced Research Projects Agency (DARPA)*, Award Amount: **\$114,741** (sub-award only), Project Period: 09/01/2018 - 08/31/2019  
Role: PI (subaward); Co-PIs: Jonathan Aldrich (PI), David Garlan, Christian Kaestner, Claire Le Goues, and Manuela Veloso.
- ROBLOX **“Unrestricted Gift”**, Agency: *Roblox Corporation*, Award Amount: **\$20,000**, Fund Approved: May 2023  
Role: PI. Collaborator: Tania Lorido-Botran (Roblox).
- GOOGLE **“GCP research credits for Adversarial ML”**, Agency: *Google*, Award Amount: **\$20,000**, Project Period: 09/01/2019 - 06/01/2020  
Role: PI.

- BIG DATA HEALTH SCIENCE CENTER (INTERNAL) **“Identifying Optimal Vaccine Promotion Messages for Vulnerable Subgroups from Large-Scale Gamified Interventions”**, Agency: *University of South Carolina*, Award Amount: **\$30,000**, Project Period: 08/16/2021 - 08/16/2022  
Role: Co-PI, PI: Gregory Trevors
- ASPIRE-I (INTERNAL) **“Optimizing Energy Consumption of Deep Neural Networks for Intelligent Learning Systems”**, Agency: *University of South Carolina ASPIRE-I*, Award Amount: **\$15,000**, Project Period: 07/01/2019 - 09/30/2020  
Role: PI
- MAGELLAN SCHOLAR AWARD (INTERNAL) **“Multi-stage Compression of Deep Neural Networks through Pruning and Knowledge Distillation”**, Agency: *UofSC Office of Undergraduate Research*, Award Amount: **\$2,750**, Project Period: 01/01/2020 - 12/31/2020  
Role: PI.
- MAGELLAN SCHOLAR AWARD (INTERNAL) **“Ensemble of Many Weak Defenses: Defending Deep Neural Networks Against Adversarial Attacks”**, Agency: *UofSC Office of Undergraduate Research*, Award Amount: **\$2,750**, Project Period: 01/01/2020 - 12/31/2020  
Role: PI.
- SURF (INTERNAL) **“Adversarial Machine Learning”**, Agency: *USC Honors College SURF Grant*, Award Amount: **\$2,000**, Project Period: 10/15/2019 - 06/30/2020  
Role: PI.
- MCNAIR (INTERNAL) **“Bayesian Structure Learning”**, Agency: *University of South Carolina McNair Junior Fellows*, Award Amount: **\$3,000**, Project Period: 05/15/2019 - 08/16/2019  
Role: PI.
- SURF (INTERNAL) **“Neurofeedback-based Reinforcement Learning”**, Agency: *USC Honors College SURF Grant*, Award Amount: **\$2,600**, Project Period: 10/15/2018 - 06/30/2019  
Role: PI.



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## MEDIA COVERAGE AND PRESS RELEASE

- Breakthrough interview An interview with the University of South Carolina's breakthrough magazine: [https://sc.edu/uofsc/posts/2022/06/breakthrough\\_star\\_pooyan\\_jamshidi.php](https://sc.edu/uofsc/posts/2022/06/breakthrough_star_pooyan_jamshidi.php)
- Podcast Interview Dr. Alireza Dehghani, in his recent podcast, interviews me about my journey from undergraduate to becoming an assistant professor at UofSC, August 2022, <https://www.youtube.com/watch?v=ZZarpnDKOY0>
- Interview with Bungee Pi Part 2 Learn math if you want to get into AI, June 2022, <https://www.youtube.com/watch?v=-Fkv180in8I>
- Interview with Bungee Pi Part 1 Breakthrough Ideas in Artificial Intelligence and Mathematics, June 2022, <https://www.youtube.com/watch?v=YdwQXW2z1bs>
- Causal AI for Systems Research intends to develop a shift in testing and debugging for modern machine learning systems, January 2022, [https://www.sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/news\\_events/news/2022/research\\_intends\\_to\\_develop\\_a\\_shift\\_in\\_testing\\_and\\_debugging\\_for\\_modern\\_machine\\_learning\\_systems.php](https://www.sc.edu/study/colleges_schools/engineering_and_computing/news_events/news/2022/research_intends_to_develop_a_shift_in_testing_and_debugging_for_modern_machine_learning_systems.php)
- AI for Social Good A new way to 'see' , June 2021, [https://www.sc.edu/uofsc/posts/2021/06/smart\\_sight.php](https://www.sc.edu/uofsc/posts/2021/06/smart_sight.php)
- AI in Space USC researcher wants to train robots for NASA deep space missions, December 2020, [https://www.postandcourier.com/columbia/news/usc-researcher-wants-to-train-robots-for-nasa-deep-space-missions/article\\_93d9bb3c-3afa-11eb-bd4c-7700ac496485.html](https://www.postandcourier.com/columbia/news/usc-researcher-wants-to-train-robots-for-nasa-deep-space-missions/article_93d9bb3c-3afa-11eb-bd4c-7700ac496485.html)
- AI in Space UofSC to develop AI-based autonomous systems for space missions, November 2020, [https://www.sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/news\\_events/news/2020/jamshidi\\_ai\\_space.php](https://www.sc.edu/study/colleges_schools/engineering_and_computing/news_events/news/2020/jamshidi_ai_space.php)
- AISys Lab Media coverage of the AISys lab, June 2019, [https://sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/news\\_events/news/2019/jamshidiai.php](https://sc.edu/study/colleges_schools/engineering_and_computing/news_events/news/2019/jamshidiai.php)

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## INVITED TALKS, LECTURES AND SEMINARS

- TALKS** The slides of my recent talks are available at: <https://pooyanjamshidi.github.io/talks/>
- ICSE/SEAMS'23 **Learning from Valerie Issarny: Insights Gained from Program Co-Chairing SEAMS'23**, Melbourne, 2023
- OKTOBERBEST **Experiential Learning by Building Real-World AI Systems**, *Oktoberbest: A Symposium On Teaching*, 2022
- NASA JPL **Understanding and Explaining the Root Causes of Performance Faults with Causal AI: A Path towards Building Dependable Computer Systems**, NASA JPL, Pasadena, CA, 2022
- EXPLORECSR **Causal AI for Systems**, *exploreCSR: Democratizing AI*, 2022
- IEEE SMDS **Causal AI for Systems**, *Virtual*, 2021
- STANFORD MLSYS **Causal AI for Systems**, *Virtual*, 2021
- DAGSTUHL SEMINAR **Causal Inference for Performance Analyses and Debugging of Serverless Systems**, *Virtual*, 2021
- ASE TUTORIAL **Machine Learning meets Software Performance**, 2021
- UNIVERSITY OF LOUISIANA **ATHENA: A Framework based on Diverse Weak Defenses for Building Adversarial Defense**, *Virtual*, November 2020
- CMU **ATHENA: A Framework based on Diverse Weak Defenses for Building Adversarial Defense**, *Virtual*, September 2020
- UPENN **ATHENA: A Framework based on Diverse Weak Defenses for Building Adversarial Defense**, *Virtual*, September 2020
- GOOGLE HEADQUARTERS **Ensembles of Many Diverse Weak Defenses can be Strong: Defending Deep Neural Networks Against Adversarial Attacks**, *Virtual*, September 2020
- AI SUMMIT AT SILICON VALLEY **Robust Causal Transfer Learning**, *Virtual*, September 2020
- AUGUSTA UNIVERSITY **Ensembles of Many Diverse Weak Defenses can be Strong: Defending Deep Neural Networks Against Adversarial Attacks**, *Augusta, Georgia*, February 2020
- FURMAN UNIVERSITY **Transfer Learning for Performance Analysis of Machine Learning Systems**, *Greenville, SC*, April 2019
- SC EPSCoR CONFERENCE **Transfer Learning for Performance Analysis of Machine Learning Systems**, *Greenville, SC*, April 2019
- RE-WORK DEVOPS SUMMIT **Machine Learning meets DevOps: Transfer Learning for Performance Optimization**, *Houston, Texas*, November 2018
- SATURN **Architectural Tradeoffs in Learning-Based Software**, *SEI Architecture User Network (SATURN) Conference*, Plano, Texas, May 2018
- NC STATE UNIVERSITY **Learning Software Performance Models for Dynamic and Uncertain Environments**, *Raleigh, US*, 2017
- SPEC DEVOPS RG **An Exploratory Analysis of Transfer Learning for Performance Modeling of Configurable Systems**, *Online talk, RG DevOps Performance Working Group*, 2017

- DAGSTUHL SEMINAR **Machine Learning meets DevOps**, *Software Performance Engineering in the DevOps World, Dagstuhl, Germany, 2016*
- BERN UNIVERSITY **An Uncertainty-Aware Approach to Optimal Configuration of Stream Processing Systems**, *Bern, Switzerland, 2016*
- SPEC DEVOPS RG **An Uncertainty-Aware Approach to Optimal Configuration of Stream Processing Systems**, *Online talk, RG DevOps Performance Working Group, 2016*
- SPEC DEVOPS RG **Microservices Architecture Enables DevOps: Migration to a Cloud-Native Architecture**, *Online talk, RG DevOps Performance Working Group, 2016*
- NC4 CONFERENCE **DevOps: Migration to a Cloud-Native Architecture**, *The National Conference on Cloud Computing & Commerce, Dublin, Ireland, 2016*
- SHARIF UNIVERSITY **Fuzzy Self-Learning Controllers for Elasticity Management in Dynamic Cloud Architectures**, *Tehran, Iran, 2016*
- NII SHONAN MEETING **Fuzzy Self-Learning Controllers for Elasticity Management in Dynamic Cloud Architectures**, *National Institute of Informatics (NII), Controlled Adaptation of Self-adaptive Systems (CASaS), Shonan, Japan, 2016*
- TRINITY COLLEGE **Self-learning Cloud Controllers**, *Trinity College Dublin, 2015*
- UFC UNIVERSITY **Self-learning Cloud Controllers**, *Federal University of Ceará, Fortaleza, Brazil, 2015*
- UECE UNIVERSITY **Cloud Migration Patterns: A Multi-Cloud Architectural Perspective**, *Ceará State University, Fortaleza, Brazil, 2015*
- NC4 CONFERENCE **Fuzzy Q-Learning for Knowledge Evolution**, *The National Conference on Cloud Computing & Commerce, Dublin, Ireland, 2015*
- SPEC DEVOPS RG **Self-learning Cloud Controllers**, *Online talk, RG DevOps Performance Working Group, 2015*
- DAGSTUHL SEMINAR **Fuzzy Control Meets Software Engineering**, *Control Theory meets Software Engineering, Dagstuhl, Germany, 2014*

## TEACHING

### CURRENT TEACHING

- Fall 2021-\* **CSCE 212: Introduction to Computer Architecture**, *University of South Carolina, Columbia, SC*, Instructor, <https://pooyanjamshidi.github.io/csce212/>
- Fall 2018-\* **CSCE 585: Machine Learning Systems**, *University of South Carolina, Columbia, SC*, Instructor, <https://pooyanjamshidi.github.io/mls/>
- Spring 2019-\* **CSCE 580: Artificial Intelligence**, *University of South Carolina, Columbia, SC*, Instructor, <https://pooyanjamshidi.github.io/csce580/>

### PAST TEACHING

- 4/2018 **S17-655 Architectures for Software Systems (CMU Software Engineering Masters Program)**, *Carnegie Mellon University, Pittsburgh, US*, A guest lecture on Machine Learning for the Software Architect
- 11/2016 **SMA: Software Modeling and Analysis (Oscar Nierstrasz's course)**, *Bern University, Switzerland*, A guest lecture on Architecture Extraction
- 10/2015–1/2016 **424H - Learning in Autonomous Systems**, *Imperial College London, TA*
- 11/2014–12/2014 **CA674 - Cloud Architecture**, *Dublin City University*, Lectures shared with Claus Pahl
- 3/2014–6/2014 **CA668 E-commerce Infrastructure**, *Dublin City University*, Lectures shared with Claus Pahl
- 10/2017 **Foundations of Software Engineering (Christian Kästner and Claire Le Goues)**, *Carnegie Mellon University*, Guest lecture on *Microservices*
- 9/2008-6/2010 **Software Engineering**, *Tarbiat Moallem University*, Lecturer
- 9/2001-6/2003 **Introduction to C/C++**, *Amirkabir University of Technology*, TA
- 9/2002-6/2003 **Data Structures**, *Amirkabir University of Technology*, TA

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## MENTORSHIP

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## POSTDOCS

2022- **Sonam Kharde**  
2022- **Mehdi Yaghouti**  
2019-2022 **Mohammad Ali Javidian**

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## DOCTORAL STUDENTS

2018-2023 **Shahriar Iqbal**, *Thesis: Performance Debugging, Optimization, and Modeling of Configurable Computer Systems*  
2023- **Rasool Sharifi**  
2021- **Abir Hossen**  
2021- **Fatehmeh Ghofrani**  
2021-2023 **Hamed Damirchi**  
2019-2022 **Jianhai Su**  
2019-2022 **Ying Meng**  
2022-2023 **Nasrin Imanpour**  
2020-2021 **Shuge Lei**

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## PHD INTERNS

2022 **Saeid Ghafouri**, *Queen Mary University of London*

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## UNDERGRADUATE STUDENTS (CURRENT)

4/2023- **Kartik Singhal**, *IIT, Delhi, India*  
1/2022- **Samuel Whidden**

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## MASTERS STUDENTS (COMPLETED)

2019-2020 **Peter Mourfield**

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## UNDERGRADUATE STUDENTS (COMPLETED)

9/2020-4/2023 **Kimia Noorbakhsh**, *Now: PhD student at MIT*  
3/2022-12/2022 **Hung-Tien Huang**, *Now: PhD student at UNC Chapel Hill*  
4/2020-6/2022 **Om Pandey**, *Now: Graduate student at Texas Austin*  
4/2021-2/2022 **Ahana Biswas**, *Now: Graduate student at Pitt*  
5/2021-8/2021 **Madelyn Khoury**, *REU*  
5/2021-8/2021 **Bruce Brasseur**, *REU*  
9/2020-4/2021 **Cody Shearer**, *RA*, *Now: Software Developer at Krumware*  
8/2018-6/2019 **Nathan Stofik**, *RA*  
12/2018-8/2019 **Tristan Klintworth**, *RA*  
8/2019-5/2020 **Blake Edwards**, *RA*, *Now: AI Technologist at Boeing Research & Technology*  
8/2019-5/2020 **Stephen Baione**, *RA*, *Now: Systems Design Engineer at AMD*  
5/2019-8/2019 **Joshua Ravishankar**, *REU*

5/2019-8/2019 **Rabina Phuyel**, *REU*

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## PRE-COLLEGE INTERNS

- 6/2021- **Lane Stanley**, *Heathwood Hall High School, Columbia, SC*  
2/2021- **Rohan Bafna**, *Riverside High School, Greenville, SC*  
4/2021- **Rohit Rajagopalan**, *Southside High school, Greenville, SC*

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## RESEARCH CO-MENTORING

- 2023 **Carnegie Mellon University**, *REU Program*, Haesue Baik (first-year undergrad at University of Michigan, Ann Arbor), co-advised by Rohan Padhye, Vasudev Vikram (CMU PhD Student)  
Understanding coverage guided fuzzing, understanding the performance of configurable systems, and designing custom fuzzing functions.
- 2022 **Carnegie Mellon University**, *REU Program*, Janhvi Somaiya (first-year undergrad at Rice University), co-advised by Christian Kaestner (CMU), Sonam Kharde (USC postdoc), Shahriar Iqbal (USC PhD student)  
On identifying configuration-specific performance bugs with fuzzing.
- 2023 **Federal University of Minas Gerais (UFMG)**, *M.Sc. thesis*, Markos Viggiano de Almeida  
On the Investigation of Software Development and Evolution Practices.
- 2017-2018 **Federal University of Minas Gerais (UFMG)**, *M.Sc. thesis*, Markos Viggiano de Almeida  
On the Investigation of Software Development and Evolution Practices.
- 2018 **Carnegie Mellon University**, *Undergraduate research project*, Students: Alex Gao, Connor Lin, Jason Bak, Sander Lanbo Shi, Yunjie Su  
Design space explorations of deep neural network architectures for embedded devices.
- 2017 **Carnegie Mellon University**, *REU Program*, Changming Xu, co-advised by Christian Kaestner (CMU)  
Can you fool a self-adaptive software system?
- 2016-17 **Imperial College London**, *B.Eng. project*, Ka Yan Wong  
Experimental study of performance variations in big data systems.
- 2016 **Imperial College London**, *M.Eng. project*, Yifan Zhai  
A DevOps canary testbed for Big Data application testing.
- 2015 **Imperial College London**, *B.Eng. final project*, Zhang Haoran, Qiu Jiaxin, Abdeljallal Fahd, Lu Cong, Chadjiminis Ioannis, Liu Yao  
A suite for automated configuration testing and benchmarking for Apache Spark.
- 2016 **Imperial College London**, *M.Eng. final project*, Xidi Chen  
A suite for automated configuration testing and benchmarking for Apache Hadoop.
- 2014-2015 **Dublin City University**, *M.Sc. practicum*, Robert Mason  
Auto-scaling in OpenStack cloud.
- 2014 **Dublin City University**, *MS.c. practicum*, Brian C. Carroll  
Auto-scaling in the cloud: evaluating a control-based technique.
- 2014-15 **Sharif University of Technology**, *M.Sc. thesis*, Armin Balalaie  
Migrating to cloud-native architectures using microservices.

2008–10 **Shahid Beheshti University**, *M.Sc. thesis*, Ali Rostampour, Ali Kazemi  
A metric for measuring the degree of entity-centric service cohesion.

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## PHD COMMITTEE MEMBER

- 2023 **Jingzhi Gong**, *Advisor: Tao Chen*, Loughborough University, UK, Pushing the Boundary: Specialising Deep Configuration Performance Learning
- 2023 **Mohammed E. Elbtity**, *Advisor: Ramtin Zand*, University of South Carolina, Computer Science and Engineering  
Approximate Computing and In-Memory Computing: The best of the two worlds!
- 2023 **Bharat Joshi**, *Advisor: Ioannis Rekleitis*, University of South Carolina, Computer Science and Engineering  
Robust Underwater State Estimation and Mapping
- 2023 **Luc Lesoil**, *Advisor: Mathieu Acher*, INSA Rennes, France, Deep Software Variability for Resilient Performance Models of Configurable Systems
- 2022 **Manas Gaur**, *Advisor: Amit Sheth*, University of South Carolina, Computer Science and Engineering  
Knowledge-Infused Learning
- 2022 **Aron Hein**, *Advisor: Homayoun Valafar*, University of South Carolina, Computer Science and Engineering
- 2022 **Olajide H. Bamidele**, *Advisor: Andreas Heyden*, University of South Carolina, Chemical Engineering
- 2021 **Rasika Jayarathna**, *Advisor: Jochen Lauterbach*, University of South Carolina, Chemical Engineering
- 2021 **Alireza Salahirad**, *Advisor: Greg Gay*, University of South Carolina, Computer Science and Engineering  
Empirical Studies on Automated Software Testing Practices
- 2020 **Elizabeth Stewart**, *Advisor: Brett Sherman*, University of South Carolina, Philosophy  
Alexa, Should I Trust You? A Theory of Trustworthiness for Artificial Intelligence
- 2020 **Nare Karapetyan**, *Advisor: Ioannis Rekleitis*, University of South Carolina, Computer Science and Engineering  
Area Coverage Path Planning Problem in Aquatic Environments
- 2020 **Hazhar Rahmani**, *Advisor: Jason O’Kane*, University of South Carolina, Computer Science and Engineering  
Automata theoretic approaches to planning in robotics: combinatorial filter minimization, planning to chronicle, and temporal logic planning with soft specifications
- 2020 **William Hoskins**, *Advisor:* , University of South Carolina, Computer Science and Engineering
- 2019 **Mohammad Ali Javidian**, *Advisor: Marco Valtorta*, University of South Carolina, Computer Science and Engineering  
Advanced Topics in Probabilistic Graphical Models: Properties, Learning Algorithms, and Applications
- 2019 **Hussein Almulla**, *Advisor: Greg Gay*, University of South Carolina, Computer Science and Engineering  
Learning How to Search: Generating Effective Test Cases Through Adaptive Fitness Function Selection

- 2019 **Shervin Ghasemlou**, *Advisor: Jason O’Kane*, University of South Carolina, Computer Science and Engineering  
Algorithmic Robot Design: Label Maps, Procrustean Graphs, and the Boundary of Non-destructiveness
- 2018 **Hayder Dawood Abbood**, *Advisor: Andrea Benigni*, University of South Carolina, Electrical Engineering  
Data-Driven Modeling Through Power Hardware in the Loop Experiments: A PV Micro-Inverter Example
- 2018 **Jason Moulton**, *Advisor: Ioannis Rekleitis*, University of South Carolina, Computer Science and Engineering  
A Novel and Inexpensive Solution to Build Autonomous Surface Vehicles Capable of Negotiating Highly Disturbed Environments

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### M.S. COMMITTEE MEMBER

- 2020 **Noah Geveke**, *Advisor: Marco Valtorta*, University of South Carolina, Computer Science and Engineering  
On the Robustness of Bayesian Network Learning Algorithms against Malicious Attacks



## SERVICE

### INTERNAL SERVICE AT THE UNIVERSITY OF SOUTH CAROLINA



- Department Graduate Committee, 2018–\*
- Department Faculty Search Committee, 2019–2020
- University SPIRE grant review committee, 2019–2020
- University Magellan review committee, 2020–2021
- University Carolina Scholar mentor, 2019–\*
- University Mentor for underrepresented minority students in an R25 NIH/NIAID funded program, total award:\$1.565m, 06/23-05/28

### PROFESSIONAL SERVICE

#### CO-FOUNDING INITIATIVES

- JSys **Co-founded JSys (Journal of Systems Research)**, a new diamond open-access journal with Vijay Chidambaram, Neeraja Yadwadkar, Ivo Jimenez, and Romain Jacob,  <https://www.jsys.org/>
- Gamecock Robotics **Mentoring the Gamecock Robotics team**, a student-led team for a competitive robotics league called Vex Robotics,  <http://gamecockrobotics.github.io/>
- SPEC RG **Elected as the vice chair of SPEC RG Predictive Data Analytics**,  <https://research.spec.org/working-groups/rg-predictive-data-analytics/>

#### EDITORIAL

- ACM TOSEM **Associate Editor at ACM TOSEM**, ACM Transactions on Software Engineering and Methodology,  <https://dl.acm.org/journal/tosem/editorial-board>
- JSys **Co-Editor at JSys (Journal of Systems Research)**, Two Areas: Computer Architecture (with Devashree Tripathy at IIT Bhubaneswar) and Configuration Management for Systems (with Tianyin Xu at UIUC),  <https://www.jsys.org/board>
- IEEE Software **IEEE Software Special Issue on Microservices, Guest editor**, Co-edited with James Lewis (ThoughtWorks), Stefan Tilkov (innoQ), Claus Pahl, and Nabor Mendonça, This special issue attracted 26 submissions, a record number in IEEE Software,  <https://www.computer.org/software-magazine/2017/02/10/microservices-call-for-papers/>

#### PROGRAM CO-CHAIR

- SEAMS 2023 The International Symposium on Software Engineering for Adaptive and Self-Managing Systems, Program Co-Chair with Valerie Issarny (update: Program Co-Chair with Radu Calinescu and Raffaella Mirandola).

#### AREA CHAIR

- AutoML-Conf 2023 2nd International Conference on Automated Machine Learning.
- AutoML-Conf 2022 1st International Conference on Automated Machine Learning.

#### CO-ORGANIZER

- ACSOS 2024 IEEE International Conference on Autonomic Computing and Self-Organizing Systems, Demo & Poster Co-Chair.
- SEAMS 2023 The International Symposium on Software Engineering for Adaptive and Self-Managing Systems, Program Co-Chair.
- MLArchSys at ISCA 2023 ML for Computer Architecture and Systems, Co-Organizer and PC.
- SEAMS 2022 The International Symposium on Software Engineering for Adaptive and Self-Managing Systems, social media chair.
- ENSEMBLE 2019 2nd International Workshop on Ensemble-based Software Engineering for Modern Computing Platforms (co-located with ESEC/FSE 2019), co-chair.
- SEAMS 2017 The International Symposium on Software Engineering for Adaptive and Self-Managing Systems, publicity and proceedings chair (Co-organized with David Garlan, Bashar Nuseibeh, Javier Camára, and Nicolás D'Ippolito).
- CloudWays 2017 International Workshop on Cloud Adoption and Migration, Workshop co-chair (Co-organized with Claus Pahl, and Nabor Mendonça).
- Dagstuhl 2016 Software Performance Engineering in the DevOps World, Co-organized the seminar with Andre van Hoorn, Philipp Leitner, and Ingo Weber.
- CloudWays 2016 International Workshop on Cloud Adoption and Migration, Workshop co-chair.
- CloudWays 2015 International Workshop on Cloud Adoption and Migration, Workshop co-chair.

#### PROGRAM COMMITTEES (CONFERENCES)

- ECAI 2024 European Conference of Artificial Intelligence
- ICPE 2024 International Conference on Performance Engineering - Data Challenge
- ICSE 2024 International Conference on Software Engineering
- ICPE 2023 International Conference on Performance Engineering
- ASE 2022 International Conference on Automated Software Engineering - Artifacts Track
- SEAMS 2022 Software Engineering for Adaptive and Self-Managing Systems
- ICPE 2022 International Conference on Performance Engineering
- ICSE/NIER 2022 International Conference on Software Engineering
- ASE 2021 International Conference on Automated Software Engineering - Artifacts Track
- AISTATS 2021 International Conference on Artificial Intelligence and Statistics
- SEAMS 2021 16th Software Engineering for Adaptive and Self-Managing Systems
- ICSA 2021 International Conference on Software Architecture
- ICPE 2021 International Conference on Performance Engineering
- XP 2020 International Conference on Agile Software Development
- ICSE 2020 International Conference on Software Engineering
- SEAMS 2020 15th Software Engineering for Adaptive and Self-Managing Systems
- ICPE 2020 International Conference on Performance Engineering
- VaMoS 2020 International Conference on Variability Modeling of Software-Intensive Systems
- ECSA 2019 13th European Conference on Software Architecture
- SATURN 2019 SEI Architecture User Network (SATURN) Conference
- ICSA 2019 International Conference on Software Architecture (Tool Track)
- Microservices 2019 International Conference on Microservices

SEAMS 2019 14th Software Engineering for Adaptive and Self-Managing Systems  
 ICSOC 2018 16th International Conference on Service-Oriented Computing  
 ECSA 2018 12th European Conference on Software Architecture  
 ICDCS 2018 38th International Conference on Distributed Computing Systems  
 SEAMS 2018 13th Software Engineering for Adaptive and Self-Managing Systems  
 ECSA 2017 11th European Conference on Software Architecture  
 SEAMS 2017 12th Software Engineering for Adaptive and Self-Managing Systems  
 EUSPN 2017 8th Emerging Ubiquitous Systems and Pervasive Networks  
 SIGMOD 2016 ACM SIGMOD 2016 Reproducibility  
 SEAMS 2016 11th Software Engineering for Adaptive and Self-Managing Systems  
 EUSPN 2016 7th Emerging Ubiquitous Systems and Pervasive Networks  
 ICISOFT 2016 13th International Conference on Software Technologies  
 ICISOFT 2015 12th International Conference on Software Technologies

### PROGRAM COMMITTEES (WORKSHOPS)

WAM 2023 1st International Workshop on Application Modernization  
 ASSYST 2023 Architecture and System Support for Transformer Models  
 AMP 2021 International Workshop on Agility with Microservices Programming  
 AKSAS 2018 International Workshop on Architectural Knowledge for Self-Adaptive Systems  
 MLMH 2018 KDD Workshop on Machine Learning for Medicine and Healthcare  
 AMS 2018 International Workshop on Architecting with MicroServices  
 SQUADE 2018 International Workshop on Software Qualities and their Dependencies  
 LTB 2018 Load Testing and Benchmarking of Software Systems  
 ASBDA 2017 International Workshop on Autonomic Systems for Big Data Analytics  
 AMS 2017 International Workshop on Architecting with MicroServices  
 QUDOS 2017 International Workshop on Quality-Aware DevOps  
 LTB 2017 Load Testing and Benchmarking of Software Systems  
 QUORS 2017 International COMPSAC Workshop on Quality Oriented Reuse of Software  
 LTB 2016 Load Testing and Benchmarking of Software Systems  
 QUORS 2016 International COMPSAC Workshop on Quality Oriented Reuse of Software

### JOURNAL REVIEWS

Brackets indicate the number of papers I reviewed (excluding revisions).

TSE (15) IEEE Transactions on Software Engineering  
 TOSEM (15) ACM Transactions on Software Engineering and Methodology  
 TAAS (10) ACM Transactions on Autonomous and Adaptive Systems  
 Software (7) IEEE Software  
 ROBOT (3) Elsevier Robotics and Autonomous Systems  
 TSC (3) IEEE Transactions on Service Computing  
 TCC (3) IEEE Transactions on Cloud Computing  
 SPI (3) Wiley Software Process: Improvement and Practice  
 IST (3) Elsevier Information and Software Technology  
 Computing (3) Springer Computing

JPDC (3) Journal of Parallel and Distributed Computing  
 EMSE (3) Springer Empirical Software Engineering  
 SoSyM (2) Springer Software & Systems Modeling  
 Oxf Comp Jrnl (2) Oxford Academic Computer Journal  
     JSEP (2) Wiley Journal of Software: Evolution and Process  
     SPE (2) Wiley Software: Practice and Experience  
     Cloud (2) IEEE Cloud Computing  
 IET Software (2) IET Software  
 PLOS ONE (2) PLOS ONE  
     ToMPECS (1) ACM Trans. on Modeling and Performance Evaluation of Computing Systems  
     CSUR (1) ACM Computing Surveys  
     Micro (1) IEEE Micro  
     ASC (1) Elsevier Applied Soft Computing  
     Computer (1) IEEE Computer  
     Computing (1) IEEE Internet Computing  
     JNCA (1) Elsevier Journal of Network and Computer Applications  
     TNSM (1) IEEE Transactions on Network and Service Management  
     JCST (1) Springer Journal of Computer Science and Technology  
     JCC (1) Springer Journal of Cloud Computing  
     SOCA (1) Springer Service Oriented Computing and Applications  
     JSA (1) Elsevier Journal of Systems Architecture  
     JBCS (1) Springer Journal of the Brazilian Computer Society  
     JSS (1) Elsevier Journal of Systems and Software  
     JWE (1) Journal of Web Engineering  
     IBM (1) IBM Journal of Research and Development  
     Computers (1) MDPI Computers  
     Entropy (1) MDPI Entropy  
     Supercomp. (1) Springer Journal of Supercomputing  
     CACM (1) Communications of the ACM  
     AIJ (1) Elsevier Artificial Intelligence Journal  
     Neurocomp (1) Elsevier Neurocomputing  
     Access (1) IEEE Access  
     Neurocomp (1) Frontiers in Epidemiology  
     TECS (1) ACM Transactions on Embedded Computing Systems

#### GRANT PROPOSAL REVIEW

2024 Swiss National Science Foundation (SNSF)  
 2023 National Aeronautics and Space Administration (NASA)  
 2023 Swiss National Science Foundation (SNSF)  
 2023 German Research Foundation, Deutsche Forschungsgemeinschaft (DFG)  
 2022 German Research Foundation, Deutsche Forschungsgemeinschaft (DFG)  
 2021 National Science Foundation (NSF) panel (CISE/CNS)

- 2021 National Science Foundation (NSF) panel (CISE/SHF)
- 2020 National Science Foundation (NSF) panel (CISE/IIS)
- 2019 Dutch Research Council (NWO)
- 2018 Canadian Science Fund (FRQnet)
- 2018 Austrian Science Fund (FWF)
- 2016 Dutch Technology Foundation (STW)
- 2023 Nazarbayev University Faculty-Development Competitive Research Grants

#### OTHER REVIEWS

- 2016 Elsevier book proposal review

#### INDUSTRY SERVICES

- SPEC I have been actively collaborating with the DevOps RG group to develop a DevOps framework by consolidating tools to better integrate performance monitoring and architectural refactoring.
- Intel and Microsoft During my postdoctoral research in IC4 (Irish cloud center with 40+ industry members), I was actively collaborating with Giovanni Estrada and Chris Woods from Intel and Niall Moran from Microsoft for developing auto-scaling mechanisms for OpenStack and Azure platforms, see [C15, C14, C18].
- IPMA Project Management Excellence My responsibility was to *assess* the quality of the projects submitted for the “National Project Management Excellence Award” and to judge their excellence by exploiting the IPMA Project Excellence Model. The assessment process included individual assessments, consensus meetings, site visits and report writing.
- Apache I am active in the Apache Storm community contributing to the auto-scaling feature of the framework: 🌐 <https://issues.apache.org/jira/browse/STORM-594>
- Imperial Consultants I was a research consultant on Big Data and Machine Learning in Imperial Consultants, a self-funding, wholly owned company of Imperial College London.

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#### MEMBERSHIP IN TECHNICAL COMMUNITIES

- 2019– AAAI
- 2015– SPEC RG DevOps Performance Group
- 2011– IEEE, ACM, ACM SIGSOFT

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## IMMIGRATION STATUS

US Permanent Resident (Green Card holder since April 2020).

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## REFERENCES

- Christian Kästner** Associate Professor, Carnegie Mellon University, PA, USA.  
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Postdoc Advisor 🌐 <https://www.cs.cmu.edu/~ckaestne/>
- Claus Pahl** Professor, Free University of Bozen-Bolzano, Italy.  
☎ +39 0471-016-177 ✉ [claus.pahl@unibz.it](mailto:claus.pahl@unibz.it)  
Ph.D. Advisor 🌐 <https://www.inf.unibz.it/~cpahl/>
- Baishakhi Ray** Associate Professor, Columbia University, NY, USA.  
☎ +1 212-939-7112 ✉ [rayb@cs.columbia.edu](mailto:rayb@cs.columbia.edu)  
Collaborator 🌐 <https://www.rayb.info/>
- David Garlan** Professor, Carnegie Mellon University, PA, USA.  
☎ +1 412-268-5056 ✉ [garlan@cs.cmu.edu](mailto:garlan@cs.cmu.edu)  
Mentor & Collaborator 🌐 <https://www.cs.cmu.edu/~garlan/>
- Jason O’Kane** Professor, Texas A&M, Texas, USA.  
☎ +39 0471-016-177 ✉ [jokane@tamu.edu](mailto:jokane@tamu.edu)  
Mentor & Collaborator 🌐 <https://jokane.net/>
- Norbert Siegmund** Professor, Leipzig University, Germany.  
☎ +49 3643-58-35-74 ✉ [norbert.siegmund@uni-leipzig.de](mailto:norbert.siegmund@uni-leipzig.de)  
Collaborator 🌐 <https://sws.informatik.uni-leipzig.de/>
- Sven Apel** Professor, Leipzig University, Germany.  
☎ +49 3643-58-35-74 ✉ [apel@cs.uni-saarland.de](mailto:apel@cs.uni-saarland.de)  
Collaborator 🌐 <https://www.se.cs.uni-saarland.de/apel/>
- Ladan Tahvildari** Professor, University of Waterloo, Canada.  
☎ +1 519-888-4567 ✉ [ladan.tahvildari@uwaterloo.ca](mailto:ladan.tahvildari@uwaterloo.ca)  
Mentor 🌐 <https://uwaterloo.ca/electrical-computer-engineering/profile/ltahvild>
- Isil Dillig** Professor, UT Austin, USA.  
☎ +1 (512) 471-9794 ✉ [isil@cs.utexas.edu](mailto:isil@cs.utexas.edu)  
Mentor 🌐 <https://www.cs.utexas.edu/~isil/>
- Marco Valtorta** Professor, University of South Carolina, SC, USA.  
☎ +1 803-777-4641 ✉ [mgv@cse.sc.edu](mailto:mgv@cse.sc.edu)  
Mentor & Collaborator 🌐 <https://www.cse.sc.edu/~mgv/>