Mohammad Ali Javidian, Ph.D.

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Research Interests

🔖 Probabilistic Graphical Models: Bayesian Networks, Chain Graphs, Markov Networks; Causality; Transfer Learning.

Education

2015 – 2019	🔖	**Ph.D.** in Computer Science and Engineering, **University of South Carolina, USA**. Thesis title: *Properties, Learning Algorithms, and Applications of Chain Graphs and Bayesian Hypergraphs.* Advisor: Marco Valtorta, Ph.D.
2011 – 2013	🔖	**M.Sc.** in Computer Science, **Sharif University of Technology, Iran.** Thesis title: *Disappointment in Social Choice Protocols*. Advisor: Rasoul Ramezanian, Ph.D.
2004 – 2007	🔖	**M.Sc.** in Mathematics, **Shiraz University, Iran.** Thesis title: *Invariant Subspaces for the Backward Shift on Hilbert Spaces of Analytic Functions with Regular Norm*. Advisor: Bahram Khani Robati, Ph.D.
1999 – 2003	🔖	**B.Sc.** in Mathematics, **Shahid Bahonar University of Kerman, Iran.**

Research Positions

Sep 2019–Now	🔖	**Research Associate**, *University of South Carolina*, Columbia, SC, USA. Working with Dr. Pooyan Jamshidi on performance debugging of highly-configurable software systems, collaborating very closely with Prof. Marco Valtorta.
Jan 2019–Aug 2019	🔖	**Research Assistant**, *University of South Carolina*, Columbia, SC, USA. Working with Dr. Pooyan Jamshidi on causal structure learning and their applications in machine learning systems, collaborating very closely with Prof. Marco Valtorta.
Jan 2017–Dec 2018	🔖	**Research Assistant**, *University of South Carolina*, Columbia, SC, USA. Working with Prof. Marco Valtorta on probabilistic graphical models: interpretations, expressiveness and learning algorithms.
Mar 2012–Sep 2013	🔖	**Research Assistant**, *Sharif University of Technology*, Tehran, Iran. Working with Dr. Rasoul Ramezanian on social choice theory and voting protocols.
Feb 2006–Sep 2007	🔖	**Research Assistant**, *University of Shiraz*, Shiraz, Iran. Working with Dr. Bahram Khani Robati on functional analysis: Hilbert and Bergman spaces.

Research Publications

Journal Articles

1. **Mohammad Ali Javidian**, Valtorta, M., & P. Jamshidi. (2020). AMP chain graphs: Minimal separators and structure learning algorithms. *Journal of Artificial Intelligence Research (JAIR) [To appear]*.

2. **Mohammad Ali Javidian**, Wang, Z., Lu, L., & Valtorta, M. (2020). On a hypergraph probabilistic graphical model. *Annals of Mathematics and Artificial Intelligence*.

Conference Proceedings

1. **Mohammad Ali Javidian**, P. Jamshidi, & Valtorta, M. (2020). Learning LWF chain graphs: A Markov blanket discovery approach, In *Proceedings of the Uncertainty in Artificial Intelligence (UAI'20)*.

2. **Mohammad Ali Javidian**, Jamshidi, P., & Ramezanian, R. (2019). Avoiding social disappointment in elections, In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS'19)*.

3. **Mohammad Ali Javidian**, Valtorta, M., & P. Jamshidi. (2019). Order-independent structure learning of multivariate regression chain graphs, In *Proceedings of the International Conference on Scalable Uncertainty Management (SUM'19)*.

4 **Mohammad Ali Javidian**, & Valtorta, M. (2018c). Finding minimal separators in LWF chain graphs, In *Proceedings of the International Conference on Probabilistic Graphical Models (PGM'18)*.

Workshop and Symposium Papers

1 **Mohammad Ali Javidian**, P. Jamshidi, & Valtorta, M. (2019). Transfer learning for performance modeling of configurable systems: A causal analysis [**First AAAI Spring Symposium "Beyond Curve Fitting: Causation, Counterfactuals, and Imagination-based AI"**, Stanford, CA].

2 Wang, Z., **Mohammad Ali Javidian**, Lu, L., & Valtorta, M. (2019). The causal interpretations of Bayesian hypergraphs [**First AAAI Spring Symposium "Beyond Curve Fitting: Causation, Counterfactuals, and Imagination-based AI"**, Stanford, CA].

3 **Mohammad Ali Javidian**, & Valtorta, M. (2018a). On the properties of MVR chain graphs [**Workshop proceedings of the International Conference on Probabilistic Graphical Models (PGM'18)**, Prague].

4 **Mohammad Ali Javidian**, & Valtorta, M. (2018b). Finding minimal separators in ancestral graphs [**Causal Inference Workshop at the Uncertainty in Artificial Intelligence (UAI'18)**, Monterey, CA].

Teaching Experience

Fall 2016	**Teaching Assistant**, *University of South Carolina*, Columbia, SC, USA. CSCE 330, Programming Language Structures CSCE 355, Foundations of Computation
Summer 2016	**Instructor**, *University of South Carolina*, Columbia, SC, USA. CSCE 101, Introduction to Computer Concepts
Fall 2015–Spring 2016	**Teaching Assistant (Lab TA)**, *University of South Carolina*, Columbia, SC, USA. CSCE 145–6, Algorithmic Design I,II
Spring 2014	**Instructor**, *Sharif University of Technology*, Tehran, Iran. Math 141–2, Calculus I,II
2007–2011	**Instructor**, *Azad University of Shiraz (SAMA)/Neyriz/Sepidan*, Fars, Iran. Discrete Mathematics, Calculus I,II, Numerical Analysis
2003–2004	**Teacher**, *High Schools in Darab*, Fars, Iran. Discrete Mathematics, Calculus, Statistics, Linear Algebra

Mentoring Experience

Spring & Summer 2020	**AISys Lab**, *University of South Carolina*, Columbia, SC, USA. Project: Performance Debugging of Software Systems. Mentee: Md Shahriar Iqbal (graduate student)
Summer 2020	**AISys Lab**, *University of South Carolina*, Columbia, SC, USA. Project: Causal Transfer Learning in Software Systems. Mentee: Om Pandey (undergraduate student)
Summer 2019	**AISys Lab**, *University of South Carolina*, Columbia, SC, USA. Project: Bayesian Structure Learning (McNAIR Junior Fellows) Mentee: Tristan Klintworth (undergraduate student)

Professional Service

- **Reviewer**, IJAR, Journal. (I reviewed one paper for this journal.)
- **Program Committee member**, PGM 2020, Aalborg.
- **Reviewer**, UAI 2020, Toronto.
- **Reviewer**, SEAMS 2020, Seoul.
- **Reviewer**, SEAMS 2019, Montreal.
- **Program Committee member**, PGM 2018, Prague.
- **Reviewer**, UAI 2018, California.
- **Reviewer**, PLOS One, Journal. (I reviewed one paper for this journal.)
- **Reviewer**, UAI 2017, Sydney.