

## Babak Salimi

---

### CONTACT INFORMATION

University of Washington  
Department of Computer Science  
and Engineering  
185 Stevens Way  
Seattle WA 98195 2350  
USA

*Cell Phone:* +1 (778)-251-5007  
*E-mail:* bsalimi@cs.washington.edu

### RESEARCH INTERESTS

I am broadly interested in data analysis and knowledge management. My recent research has been focused on data-driven decision making systems, causal inference, algorithmic fairness and statistical relational learning.

### CURRENT POSITION **Postdoctoral Research Associate** **2016-current**

University of Washington, Seattle, USA

- I am a postdoc in the Department of Computer Science and Engineering where I work with Prof. Dan Suciu and the database group.

### EDUCATION **Doctoral of Philosophy, Computer Science** **2011-2015**

Carleton University, Ottawa, Canada

- Dissertation Topic: “Query-Answer Causality in Databases and its Connections with Reverse Reasoning Tasks in Data and Knowledge Management”
- Advisor: Prof. Leopoldo Bertossi

### **Master of Science, Computation Theory** **2006-2009**

Sharif University of Technology, Tehran, Iran

- Dissertation Topic: “Incorporating Degree of Belief, Desire and Intention in BDI Agents”
- Advisor: Prof. Mohammad Ardeshtir

### **Bachelor of Engineering, Software Engineering** **2001-2006**

**Azad University of Mashhad**, Mashhad, Iran

### HONORS AND AWARDS

#### **Research Fellowships**

- NSF Award IIS-1703431: “III: Medium: Collaborative Research: A Unified and Declarative Approach to Causal Analysis for Big Data” **2017-2020**
- University of Washington CSE Postdoc Research Award **2016-2017**
- NSERC Discovery and the NSERC Strategic Network on Business Intelligence **2011-2015**

#### **Paper Awards**

- SIGMOD Best Paper Award (for SIGMOD 2019 paper)
- VLDB Best Demonstration Award (for VLDB 2018 paper)
- Senate Medal Candidate for Outstanding Graduate Work (For PhD dissertation)
- Invited submission to special issue of Theory of Computing Systems (for the ICDT 2015 paper)

#### **Undergraduate Honors**

- Ranked 25<sup>th</sup> (among 5000) in Iran’s National Entrance Examination to graduate study **2005**

ACADEMIC  
EXPERIENCE

**Teaching Assistant, Computer Science**

Carleton University, Ottawa, Canada

**2011-2016**

- Answered questions of 250 undergraduate students during office hours
- Accurately graded and recorded students marks while meeting deadlines set by professor
- Courses: Database Management Systems, Programming Paradigm, Introduction to Computer Science

**Lecturer, Computer Science**

University of Washington, Seattle, USA

**Winter 2018**

- Course: Data Management for Data Science

Azad University, Mashhad, Iran

**2010-2011**

- Courses: Theory of Languages and Automata, Algorithm Design, Discrete Mathematics

Payamnour University, Mashhad, Iran

**2008-2010**

- Courses: Computation Theory, Graph Theory Algorithm Design and Analysis, Discrete Mathematics

BOOKS

**An Introduction to the Theory of Languages and Automata**

Translation of the English version by Peter linz in Persian. ISBN: 978-600-5068-45-0, 2009

PAPERS

- **Interventional Fairness: Causal Database Repair for Algorithmic Fairness.**  
With Luke Rodriguez, Bill Howe, and Dan Suciu. Accepted in SIGMOD 2019 [\[Best Paper Award\]](#)
- **HypDB: A Demonstration of Detecting, Explaining and Resolving Bias in OLAP queries**  
with Corey Cole, Peter Li, Johannes Gehrke and Dan Suciu. Proceedings of the VLDB Endowment, 2018 [\[Best Demonstration Award\]](#)
- **MobilityMirror: Bias-Adjusted Synthetic Transportation Datasets.**  
With Luke Rodriguez, Babak Salimi, Haoyue Ping, Julia Stoyanovich and Bill Howe. BiDU 2018
- **Bias in OLAP Queries: Detection, Explanation, and Removal (think twice about your group-by query).**  
With Johannes Gehrke and Dan Suciu. SIGMOD '18- Proceedings of the 2018 ACM International Conference on Management of Data, 2018
- **A Framework for Inferring Causality from Multi-Relational Observational Data using Conditional Independence.**  
With Sudeepa Roy. arXiv preprint arXiv:1708.02536, 2017
- **Causal Inference from Observational Data at Scale.**  
With Corey Cole, D. R. Ports, and Dan Suciu. Proceedings of the VLDB Endowment, 2017
- **A Demonstration of Interactive Analysis of Performance Measurements with Viska.**  
With Helga Gudmundsdottir, Magdalena Balazinska, Dan R.K. Ports, Dan Suciu. SIGMOD '17- Proceedings of the 2017 ACM International Conference on Management of Data, 2017
- **From Causes for Query Answers from Databases: Datalog Abduction, View-Updates, and Integrity Constraints.**  
With Leopoldo Bertossi. International Journal of Approximate Reasoning , 2017

- **From Causes for Database Queries to Repairs and Model-Based Diagnosis and Back.**  
With Leopoldo Bertossi. Theory of Computing Systems, 2017
- **Quantifying Causal Effects on Query Answering in Databases.**  
With Leopoldo Bertossi, Dan Sucie, Guy Van den Broeck. in Proc. 8th USENIX Workshop on the Theory and Practice of Provenance (TaPP'16), June 8-9, Washington D.C., USA, 2016
- **From Causes for Database Queries to Repairs and Model-Based Diagnosis and Back.**  
With Leopoldo Bertossi. In Proc. FLAIRS, 2016
- **Query-Answer Causality in Databases and its Connections with Reverse Reasoning Tasks in Data and Knowledge Management.**  
PhD thesis, 2015
- **Query-Answer Causality in Databases: Abductive Diagnosis and View-Updates.**  
with Leopoldo Bertossi. To appear in Proc. of the UAI Workshop on Causal Inference, 2015
- **From Causes for Database Queries to Repairs and Model-Based Diagnosis and Back.**  
with Leopoldo Bertossi. In Proc. 18th International Conference on Database Theory (ICDT), 2015
- **Unifying Causality, Diagnosis, Repairs and View-Updates in Databases.**  
With Leopoldo Bertossi. Presented at the First International Workshop on Big Uncertain Data (BUDA), 2014
- **Causality in Databases: The Diagnosis and Repair Connections.**  
With Leopoldo Bertossi. Presented at the 15th International Workshop on Non-Monotonic Reasoning 2014 (Includes KR €600 travel fellowship)
- **Causality in Databases, Database Repairs, and Consistency-Based Diagnosis.**  
With Leopoldo Bertossi. In Proc. AMW, 2014

PROFESSIONAL EXPERIENCES	<b>Research Developer, Knowit Inc.</b> <span style="float: right;"><b>2015-2016</b></span> Ottawa, Canada <ul style="list-style-type: none"> <li>• Leading a research and development project for automated speech transcription of Web, TV, Radio and Telephonic audio streams using java</li> </ul>
ACADEMIC SERVICES	<ul style="list-style-type: none"> <li>• External Reviewer: IJCAI 2014, IJCAI 2018, SIGMOD 2019</li> <li>• PC Member: CIKM 2017, CIKM 2018, FLAIRS 2017, FLAIRS 2018, SIGMOD 2020</li> <li>• Program Chair: TAPP 2017, TAPP 2019</li> </ul>
TALK	<ul style="list-style-type: none"> <li>• Detecting Bias in Decision Support Queries, Tableau Software, Seattle, USA <span style="float: right;"><b>2018</b></span></li> </ul>
REFERENCES	<ul style="list-style-type: none"> <li>• Professor Dan Suciu- University of Washington. Email: <a href="mailto:suciu@cs.washington.edu">suciu@cs.washington.edu</a></li> <li>• Professor Leopoldo Bertossi - Carleton University. Email: <a href="mailto:bertossi@scs.carleton.ca">bertossi@scs.carleton.ca</a></li> <li>• Professor Bill How- University of Washington. Email: <a href="mailto:billhowe@uw.edu">billhowe@uw.edu</a></li> <li>• Johannes Gehrke - Microsoft. Email: <a href="mailto:johannes@microsoft.com">johannes@microsoft.com</a></li> <li>• Dan Ports - Microsoft. Email: <a href="mailto:drkp@cs.washington.edu">drkp@cs.washington.edu</a></li> </ul>