Babak Salimi

CONTACT
INFORMATION

University of Washington
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RESEARCH
INTERESTS

I am interested in data analysis and knowledge management. My recent research focuses 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 Allen School 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 Ardeshir

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" (Co-PI) **2017-2020**
- University of Washington CSE Postdoc Research Award **2016-2017**

Paper Awards
- Invited submission to special issue of *ACM Transactions on Database Systems* (for SIGMOD 2019 paper)
- Best Paper Award, SIGMOD 2019
- Best Demonstration Paper Award, VLDB 2018
- 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 25th (among 5000) in Iran's National Entrance Examination to graduate study   **2005**

ACADEMIC
EXPERIENCE

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

Teaching Assistant, Computer Science
Carleton University, Ottawa, Canada   **2011-2016**
- Courses: Database Management Systems, Programming Paradigms, Introduction to Computer Science

BOOKS

Babak Salimi and Mojtaba Poormohaghegh. *An Introduction to the Theory of Languages and Automata.* Translation of the English version to Farsi by by Peter Linz. ISBN: 978-600-5068-45-0, 2009.

JOURNAL
PUBLICATIONS

- Leopoldo Bertossi and Babak Salimi: *Causes for Query Answers from Databases: Datalog Abduction, View-Updates, and Integrity Constraints.* **International Journal of Approximate Reasoning** 90, 226-252, 2017.

- Leopoldo Bertossi and Babak Salimi. *From Causes for Database Queries to Repairs and Model-Based Diagnosis and Back.* **Theory of Computing Systems**. 61.1, 191-232, 2017.

CONFERENCE
PUBLICATIONS

- Babak Salimi, Moe Kayali, Harsh Parikh, Sudeepa Roy, Lise Getoor, Dan Suciu. *Causal Relational Learning.* Submitted.

- Babak Salimi, Bill Howe, Dan Suciu. *Data Management for Causal Algorithmic Fairness.* **IEEE Data Engineering Bulletin**, vol. 42, no. 3, 2019.

- Babak Salimi, Luke Rodriguez, Bill Howe, and Dan Suciu. *Interventional Fairness: Causal Database Repair for Algorithmic Fairness.* In Proceedings of the 2019 International Conference on Management of Data (**SIGMOD**), 793-810. ACM, 2019. [**Best Paper Award**]

- Luke Rodriguez, Babak Salimi, Haoyue Ping, Julia Stoyanovich, and Bill Howe. *Mobilitymirror: Bias-Adjusted Transportation Datasets.* In Workshop on **Big Social Data and Urban Computing**, 18-39. Springer, Cham, 2018.

- Babak Salimi, Corey Cole, Peter Li, Johannes Gehrke, and Dan Suciu. *HypDB: A Demonstration of Detecting, Explaining and Resolving Bias in OLAP Queries.* Proceedings of the **VLDB** Endowment 11, no. 12, 2062-2065, 2018. [**Best Demonstration Paper Award**]

- Babak Salimi, Johannes Gehrke, and Dan Suciu. *Bias in olap queries: Detection, Explanation, and Removal.* Proceedings of the 2018 International Conference on Management of Data (**SIGMOD**), 1021-1035. ACM, 2018.

- Babak Salimi, Corey Cole, Dan RK Ports, and Dan Suciu. *Zaliql: Causal Inference from Observational Data at Scale.* Proceedings of the **VLDB** Endowment 10, no. 12, 1957-1960, 2017.

- Helga Gudmundsdottir, Babak Salimi, Magdalena Balazinska, Dan RK Ports, and Dan Suciu. *A Demonstration of Interactive Analysis of Performance Measurements with Viska.* Proceedings of the 2017 ACM International Conference on Management of Data (**SIGMOD**), 1707-1710. ACM, 2017.

- Babak Salimi, Leopoldo Bertossi, Dan Suciu, and Guy Van den Broeck. *Quantifying Causal Effects on Query Answering in Databases.* In USENIX Workshop on the Theory and Practice of Provenance (**TaPP**'16), 2016.

- Babak Salimi, and Leopoldo Bertossi. *Causes for query answers from databases, datalog abduction and view-updates: The presence of integrity constraints.* In The Twenty-Ninth International **Flairs** Conference, 2016.

- Babak Salimi and Leopoldo Bertossi. *Query-Answer Causality in Databases: Abductive Diagnosis and View-Updates..* Proceedings of the **UAI** Conference on Advances in Causal Inference - Volume 1504, 76-85, 2015.

- Babak Salimi and Leopoldo Bertossi. *From Causes for Database Queries to Repairs and Model-Based Diagnosis and Back.* Proceedings of the 18th International Conference on Database Theory (**ICDT**), 2015.

- Babak Salimi and Leopoldo Bertossi. *Unifying Causality, Diagnosis, Repairs and View-Updates in Databases.* Presented at the First International Workshop on Big Uncertain Data (**BUDA**), 2014.

- Babak Salimi and Leopoldo Bertossi. *Causality in Databases: The Diagnosis and Repair Connections.* Proceedings of the 15th International Workshop on Non-Monotonic Reasoning (**NMR**), 2014. (Includes KR €600 travel fellowship)

- Babak Salimi and Leopoldo Bertossi. *Causality in Databases, Database Repairs, and Consistency-Based Diagnosis.* Proceedings of the 8th Alberto Mendelzon Workshop on Foundations of Data Management, Cartagena de Indias (**AMW**), 2014.

PH.D.
DISSERTATION
Query-Answer Causality in Databases and Its Connections with Reverse Reasoning Tasks in Data and Knowledge Management.
Carleton University, 2015.

PROFESSIONAL EXPERIENCES	**Research Developer, Knowit Inc.** **2015-2016** Ottawa, Canada • Led a research and development project for automated speech transcription of Web, TV, Radio and Telephonic audio streams.

ACADEMIC SERVICES
- External Reviewer: IJCAI (2014, 2018) SIGMOD 2019
- PC Member: CIKM (2017, 2018), TAPP (2017,2019), FLAIRS (2017, 2018), AAAI 2020, DASFAA 2020, SIGMOD 2020
- PC Chair: TAPP 2017

TALKS
- Detecting Bias in Decision Support Queries, Tableau Software, Seattle, USA **2018**

REFERENCES
- Professor Dan Suciu, University of Washington. Email: suciu@cs.washington.edu
- Professor Lise Getoor, University of California, Santa Cruz. Email: getoor@soe.ucsc.edu
- Professor Leopoldo Bertossi, Carleton University. Email: bertossi@scs.carleton.ca
- Professor Bill Howe, University of Washington. Email: billhowe@uw.edu
- Professor Sudeepa Roy, Duke University. Email: sudeepa@cs.duke.edu
- Johannes Gehrke, Microsoft. Email: johannes@microsoft.com
- Dan Ports, Microsoft Research. Email: drkp@cs.washington.edu