

# Shimin Li

---

Department of Computer Science  
Winona State University  
175 W. Mark St., Winona, MN 55987-5838, USA  
Phone: (507) 457-5261  
Email: [shimin.li@winona.edu](mailto:shimin.li@winona.edu)  
<https://cs.winona.edu/faculty/shiminli/>

- Current Position**      **Associate Professor**  
Department of Computer Science, Winona State University.
- Education**
- Ph.D. in Computer Science, May 2018**  
Utah State University, Logan, Utah, USA  
Dissertation: *Geometric Algorithms for Intervals and Related Problems*  
Advisor: Professor Haitao Wang.
- M.S. in Pattern Recognition and Intelligent System, June 2010**  
East China University of Science and Technology, Shanghai, China  
Thesis: *Optimization Algorithms for Data Transmission in Wireless Networks*  
Advisor: Professor Xingyu Wang.
- B.S. in Automation, July 2006**  
Northeast Petroleum University, Daqing, Heilongjiang, China
- Research Interests**      Algorithms and Theory, Data Structures, Combinatorial Optimization, High Performance Computing, Computational Geometry, Wireless Sensor Network, Internet of Things (IoT), etc.
- Grants**
- TedVentures, Inc. (Award No. 2021-015), “Algorithms for computer aided design systems and geometric problems”, November 15, 2020 – December 31, 2021, Sole PI, \$ 23,000.
- Teaching**
- Teaching at Winona State University
- CS 101 Exploring Creative Computing, Fall 2018, Fall 2019, Fall 2020, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024.
  - CS 234 Algorithms and Problem Solving, Spring 2019, Spring 2023.
  - CS 275 Mathematical Foundations of Algorithms, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024.
  - CS 313 Networking and Telecommunications, Spring 2020, Spring 2021.
  - CS 344 Introduction to Web Programming, Spring 2019, Fall 2019, Summer 2020, Fall 2020, Fall 2021, Fall 2022, Fall 2023, Fall 2024.
  - CS 346 Introduction to Internet of Things, Summer 2019, Summer 2020, Summer 2021, Summer 2023, Summer 2024.
  - CS 440 Theory of Algorithms, Fall 2018, Summer 2019, Fall 2019, Spring 2022, Spring 2024.
  - CS 495 Computer Science Research Seminar, Spring 2019, Spring 2020.

Other Teaching Experience at Utah State University

- Instructor of Recitation for CS1400: Introduction to Computer Science–CS 1, Spring 2018
- Teaching Assistant for CS5700: Object-Oriented Software Development, Fall 2017

**Honors and Awards**

- Professional Improvement Funds, 2024
- Special Project of WSU Foundation, 2021
- Professional Improvement Funds, 2020
- Special Project of WSU Foundation, 2019
- RGS Graduate Student Travel Award, 2016
- RGS Graduate Student Travel Award, 2015

**Professional Experience**

**Associate Professor** **August 2023 – Present**  
**Winona State University**, Department of Computer Science, Winona, MN

**Assistant Professor** **August 2018 – July 2023**  
**Winona State University**, Department of Computer Science, Winona, MN

- Teach courses and conduct research on algorithms and computational geometry.

**Design Engineer(Graduate Intern)** **May 2017 – August 2017**  
**Cadence Design Systems Inc.**, Research and Development Department, Cary, NC

- Implement algorithms for planarity testing, planar graph embedding, and outerplanarity testing in C++.

**Senior Software Engineer** **July 2010 – June 2014**  
**China UnionPay**, Electronic Payment Research Institute, Shanghai, China

- Develop and maintain the electric payment system in C programming language.

**Software Engineer(Intern)** **November 2009 – May 2010**  
**Huateng Software Company**, Research and Technology Department, Shanghai, China

- Develop and maintain the cellphone ticket system in C programming language.

**System Engineer(Intern)** **September 2007 – August 2008**  
**Siemens Industrial Automation Ltd.**, Engineering Department, Shanghai, China

- Design and implement the distributed control system for Novartis, one of the top pharmaceutical companies in the world.

**Publications**

**Books**

1. **Shimin Li**. *Java Programming is Easy*, Beijing: Tsinghua University Press, 2012.

**Peer Reviewed Journal Articles**

2. **Shimin Li** and Haitao Wang. “Algorithms for Minimizing the Movements of Spreading Points in Linear Domains”, *Computing in Geometry and Topology (CGT)*, Vol. 4, No 1, pages 1–15, 2025.

3. **Shimin Li** and Haitao Wang. “Separating Overlapped Intervals on a Line”, *Journal of Computational Geometry (JoCG)*, Vol. 10, No 1, pages 281–321, 2019.
4. **Shimin Li** and Haitao Wang. “Algorithms for Covering Multiple Barriers”, *Theoretical Computer Science (TCS)*, Vol. 758, pages 61–72, 2019.
5. **Shimin Li** and Haitao Wang. “Dispersing Points on Intervals”, *Discrete Applied Mathematics (DAM)*, Vol. 239, pages 106–118, 2018.
6. Wei Cao, Jian Li, **Shimin Li**, and Haitao Wang. “Balanced Splitting on Weighted Intervals”, *Operations Research Letters*, Vol. 43, pages 396–400, 2015.

#### Peer Reviewed Conference Papers

7. **Shimin Li**, Zhongjiang Yan, and Jingru Zhang. “An Optimal Algorithm for Maintaining Connectivity of Wireless Network on a Line”, *Proceedings of the 31st Canadian Conference on Computational Geometry (CCCG)*, Edmonton, Canada, August 2019, pages 78–84.
8. **Shimin Li** and Haitao Wang. “Algorithms for Covering Multiple Barriers”, *Proceedings of the 15th Algorithms and Data Structures Symposium (WADS)*, St. John’s, Canada, August 2017, pages 533–544.
9. **Shimin Li** and Haitao Wang. “Dispersing Points on Intervals”, *Proceedings of the 27th International Symposium on Algorithms and Computation (ISAAC)*, Sydney, Australia, December 2016, pages 52:1–52:12.
10. **Shimin Li** and Haitao Wang. “Separating Overlapped Intervals on a Line”, *The 26th Fall Workshop on Computational Geometry (FWCG)*, New York, USA, October 2016. (Abstract Only)
11. **Shimin Li** and Haitao Wang. “Algorithms for Minimizing the Movements of Spreading Points in Linear Domains”, *Proceedings of the 27th Canadian Conference on Computational Geometry (CCCG)*, Kingston, Canada, August 2015, pages 187–192.
12. **Shimin Li** and Xingyu Wang. “A Modeling and Optimizing Method Based on the Topology Information of Wireless Sensor Network”, *Proceedings of the 29th Chinese Control Conference (CCC)*, Beijing, China, July 2010, pages 4802–4806.

#### Professional Services

#### Program Committee Member

- The *4th Colloquium on Analytics, Data Science, and Computing (CADSCOM 2022)*, Edina, Minnesota, USA, November 2022.
- The *Fourteenth International Conference on Emerging Security Information, Systems and Technologies (SECURWARE 2020)*, Valencia, Spain, November 2020.
- The *Thirteenth International Conference on Emerging Security Information, Systems and Technologies (SECURWARE 2019)*, Nice, France, October 2019.
- The *2019 8th International Congress on Big Data (BigData Congress 2019)*, San Diego, USA, June 2019.
- The *13th International Frontiers of Algorithmics Workshop (FAW 2019)*, Sanya, Hainan, China, April 2019.
- The *4th EAI International Conference on IoT as a Service (IoTaaS 2018)*, Xi’an, Shaanxi, China, November 2018.

## Review for Journals

- IEEE/ACM Transactions on Networking
- Journal of Combinatorial Optimization
- Mobile Networks and Applications
- Operations Research Letters
- Optimization Methods and Software
- Theory of Computing Systems

## Conference Presentations

- “An Optimal Algorithm for Maintaining Connectivity of Wireless Network on a Line”, *Proceedings of the 31st Canadian Conference on Computational Geometry (CCCG)*, Edmonton, Canada, August 2019.
- “Dispersing Points on Intervals”, *Proceedings of the 27th International Symposium on Algorithms and Computation (ISAAC)*, Sydney, Australia, December 2016.
- “Separating Overlapped Intervals on a Line”, *The 26th Fall Workshop on Computational Geometry (FWCG)*, New York, USA, October 2016.
- “Algorithms for Minimizing the Movements of Spreading Points in Linear Domains”, *Proceedings of the 26th Canadian Conference on Computational Geometry (CCCG)*, Kingston, Canada, August 2015.
- “A Modeling and Optimizing Method Based on the Topology Information of Wireless Sensor Network”, *Proceedings of the 29th Chinese Control Conference (CCC)*, Beijing, China, July 2010.