

Biographical Sketch

Bei Wang Phillips

Publish under **Bei Wang** | Associate Professor | Kahlert School of Computing
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March 8, 2024

Professional Preparation

University of Bridgeport, USA	Computer Science and Mathematics	B.S. 2003
Duke University, USA	Computer Science	Ph.D. 2010

Appointments

2022 – Present	Associate Professor, School of Computing, Univ. of Utah
2016 – Present	Faculty Member, SCI Institute, Univ. of Utah
2019 – Present	Adjunct Associate Professor, Department of Mathematics, Univ. of Utah
2016 – 2022	Assistant Professor, School of Computing, Univ. of Utah
2011 – 2016	Research Computer Scientist, SCI Institute, Univ. of Utah
2010 – 2011	Postdoctoral Fellow, SCI Institute, Univ. of Utah
2009 – 2010	Visiting Researcher, Institute of Science and Technology, Austria

Recent Publications¹

1. Lin Yan, Xin Liang, Hanqi Guo, and Bei Wang. TopoSZ: Preserving topology in error-bounded lossy compression. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 30:1302–1312, 2024.
2. Kevin Knudson and Bei Wang. Discrete stratified Morse theory: Algorithms and a user’s guide. *Discrete & Computational Geometry (DCG)*, 2022*
3. Youjia Zhou, Archit Rathore, Emilie Purvine, and Bei Wang. Topological simplifications of hypergraphs. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2022
4. Adam Brown and Bei Wang. Sheaf-theoretic stratification learning from geometric and topological perspectives. *Discrete & Computational Geometry (DCG)*, 65:1166–1198, 2021*
5. Lin Yan, Yusu Wang, Elizabeth Munch, Ellen Gasparovic, and Bei Wang. A structural average of labeled merge trees for uncertainty visualization. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 26(1):832–842, 2020

Other Significant Publications

1. Lin Yan, Hanqi Guo, Tom Peterka, Bei Wang, and Jiali Wang. TROPHY: A topologically robust physics-informed tracking framework for tropical cyclones. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 30:1302–1312, 2024.
2. Samir Chowdhury, Tom Needham, Ethan Semrad, Bei Wang, and Youjia Zhou. Hypergraph Co-Optimal transport: Metric and categorical properties. *Journal of Applied and Computational Topology (APCT)*, 2023.

¹Publications marked with a * list authors alphabetically.

3. Tushar Athawale, Dan Maljovec, Lin Yan, Chris R. Johnson, Valerio Pascucci, and Bei Wang. Uncertainty visualization of 2D Morse complex ensembles using statistical summary maps. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 28(4):1955–1966, 2022
4. Shusen Liu, Dan Maljovec, Bei Wang, Peer-Timo Bremer, and Valerio Pascucci. Visualizing high-dimensional data: Advances in the past decade. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 23(3):1249–1268, 2017
5. Elizabeth Munch and Bei Wang. Convergence between categorical representations of Reeb space and mapper. *International Symposium on Computational Geometry (SOCG)*, 2016*

Synergistic Activities

1. Served as lecturer/educational module designer for Hi-GEAR (Girls Engineering Abilities Realized) Camp, part of Engineering Summer Camps at the University of Utah (2016, 2018-2023, 6 years). Hi-GEAR is designed to expose young women (currently in 9th-12th grade) to a variety of engineering and computer science careers with hands-on experiential learning and collaborative team projects.
2. Organized three Dagstuhl Seminars on “Topology, Computation and Data Analysis” (2017, 2019, 2023) that help bridge researchers from applied topology, computational topology, topological data analysis, and visualization to build new collaborations.
3. Advised eight undergraduate students (five of them funded under the NSF REU program). Two students won a Finalist and an Honorable Mention in the Computing Research Association (CRA) Outstanding Undergraduate Researcher Awards 2021 and 2018, respectively.
4. Broadening the participation of groups underrepresented in STEM: have advised four female Ph.D. and one female MS students, two female undergraduate students, and one African-American undergraduate student under the REU program. Two of the undergraduate female mentees won prestigious awards: *2018 School of Computing Outstanding Graduating Senior Award* at the University of Utah, a *best paper award* at the MICCAI CNI workshop 2018, an honorable mention in the *Computing Research Association (CRA) Outstanding Undergraduate Researchers* 2018.
5. Invited Speaker at HackTheU, Oct. 2017. HackTheU is Utah’s largest hackathon where students develop their solutions to many kinds of applications including IoT and VR.