Da Wei (David) Zheng

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PhD student researching algorithms and data structures involving geometry and graphs.

Education

- **University of Illinois Urbana-Champaign** Champaign, IL
  PhD Computer Science (Theory) *Aug. 2020 - Expected May 2024*
  Advisor: Timothy Chan

- **University of British Columbia** Vancouver, BC
  MSC Computer Science (Theory) *Sep. 2018 - Aug. 2020*
  Advisor: William Evans
  Thesis: Scheduling queries to moving entities to certify many are distant from a region

- **University of British Columbia** Vancouver, BC
  BSC Combined Honours Mathematics and Computer Science *Sep. 2014 - May. 2018*

Work Experience

- **Google LLC** Mountain View, CA
  Software Engineering Intern *May 2018 - Aug. 2018*
  – Implemented and optimized tool for querying payments change history data.

- **Facebook Inc.** Menlo Park, CA
  Software Engineering Intern *Jun. 2017 - Sep. 2017*
  – Integrated virtual machines into Facebook's existing backend distributed containers service.

- **Dr. Daniel Coomb's Applied Mathematics Lab** University of British Columbia
  NSERC Research Student *May 2016 - Aug. 2016*
  – Designed and implemented graph based clustering algorithm for quantitative data analysis.

Publications

- Timothy Chan and Da Wei Zheng. Hopcroft's problem, log-star shaving, 2d fractional cascading, and decision trees. 21 pages. To appear in SODA 2022.

- Paul Liu, Jack Spalding-Jamieson, Brandon Zhang, and Da Wei Zheng. Coordinated motion planning through randomized k-opt (CG challenge). In Kevin Buchin and Éric Colin de Verdière, editors, *37th International Symposium on Computational Geometry, SoCG 2021, June 7-11, 2021, Buffalo, NY, USA (Virtual Conference)*, volume 189 of *LIPIcs*, pages 64:1–64:8. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2021.

- Da Wei Zheng, Jack Spalding-Jamieson, and Brandon Zhang. Computing low-cost convex partitions for planar point sets with randomized local search and constraint programming (CG challenge). In Sergio Cabello and Danny Z. Chen, editors, *36th International Symposium on Computational Geometry, SoCG 2020, June 23-26, 2020, Zürich, Switzerland*, volume 164 of *LIPIcs*, pages 83:1–83:7. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2020.

- Joshua M. Scurll, Libin Abraham, Da Wei Zheng, Reza Tafteh, Keng C. Chou, Michael R. Gold, and Daniel Coombs. Stormgraph: An automated graph-based algorithm for quantitative clustering analysis of single-molecule localization microscopy data. *bioRxiv*, 2019.

Teaching

- **Department of Computer Science** University of Illinois Urbana-Champaign
  Teaching Assistant
  - CS 374 - Algorithms and Models of Computation *Aug. 2021 - Apr. 2022*
- **Department of Computer Science and Mathematics** University of British Columbia
  Instructor
  - CPSC 490 - Problem Solving in Computer Science *Jan. 2017 - Apr. 2017*

  Teaching Assistant
  - CPSC 420 - Advanced Algorithms and Data Structures *Sep. 2018 - May. 2019*
  - CPSC 221 - Algorithms and Data Structures *Jun. 2016 - Apr. 2017*
  - MATH 180 - Differential Calculus with Physical Applications *Sep. 2015 - Dec. 2015*

Other

- **Competitive Programming Club** University of British Columbia
  Coach and Participant
  - *Coach* - Ran local practices, problem discussion, and coached teams. *Sep. 2017 - Dec. 2020*
    - Coached team to 1st in PacNW 2019, 2nd PacNW 2020. 25th place in ICPC WF 2020.
    - Created questions and hosted the UBC Programing Contest 2019 and 2020.
  - *Participant* - Worked as a team of three in competitions. *Jan. 2015 - July 2019*
    - 1st place in PacNW 2018 and 41st place in ICPC World Finals 2019 in Porto.
    - 3rd place in PacNW 2017 and 56th place in ACM-ICPC World Finals 2018 in Beijing.
- **UBC Math Circle** University of British Columbia
  Organizer *Sep 2017 - Nov. 2017*
  - Helped organize weekly lectures and practice math problems for high school students.
- **Capture the Flag (CTF) Competitions** Maple Bacon (UBC) & SIGPwny (UIUC)
  Participant *Aug. 2021 - now*
- **Languages:** C/C++, Python, Java, Matlab, Julia. Open to learning new languages.