CURRICULUM VITAE

Nathan Cordner[1]

Education

PhD in Computer Science, Boston University — Aug 2023

- Thesis Title: "Scalable Algorithms for Correlation Clustering on Large Graphs"
- Advisor: Dr. George Kollios

MS in Computer Science, Boston University — Sep 2019

MS in Mathematics, Brigham Young University — Aug 2016

- Thesis Title: "Isomorphisms of Landau-Ginzburg B-Models"
- Advisor: Dr. Tyler Jarvis

BS in Mathematics, Brigham Young University — Aug 2014

Work Experience

Assistant Professor, Utah Valley University — Aug 2023–Present

- Course list:
  - CS 3310 – Analysis of Algorithms
  - CS 1410 – Object Oriented Programming (Python)

Instructor, Boston University Summer Challenge — Jul 2021–Aug 2022

- Developed a two-week Python seminar for high school students
- Supervised 20 students per class in group programming projects
- Taught 3 classes per year, both in-person and remotely

[1]Utah Valley University Department of Computer Science
800 W University Pkwy, Room CS-520
Orem, UT 84058

Graduate Teaching Fellow, Boston University Sep 2017–Jun 2022

- Led discussion and lab sections to review material covered in lecture
- Taught in in-person, online, and hybrid settings
- Course list:
  * CS 111 – Introduction to Computer Science 1 (Python), 3 semesters
  * CS 112 – Introduction to Computer Science 2 (Java and Data Structures)
  * CS 132 – Geometric Algorithms (Linear Algebra), 2 semesters
  * CS 237 – Probability in Computing
  * CS 330 – Algorithms Analysis, 2 semesters
  * CS 455 – Computer Networks
  * CS 565 – Data Mining

Course Grader, Boston University Jan 2018–Dec 2019

- Graded homework for CS 332 – Theory of Computation, 3 semesters

Instructor, Brigham Young University Jun 2015–Jun 2016

- Taught courses as the sole instructor
- Course list:
  * Math 112 – Calculus I
  * Math 113 – Calculus II
  * Math 116 – Business Calculus
  * Math 314 – Calculus III

Software Engineer, Vecna Technologies Oct 2016–Aug 2017

- Supported two healthcare clients with software customizations
- Worked on team of seven engineers in an Agile development environment
- Generated developer tools and automated various manual processes

Graduate Teaching Assistant, Brigham Young University Sep 2014–Jun 2016

- Led discussion and lab sections to review material covered in lecture
- Course list:
  * Math 112 – Calculus I, 2 semesters
  * Math 290 – Foundations of Mathematics

Undergraduate Teaching Assistant, Brigham Young University Jan 2010–Apr 2010

- Assisted with CS 142, an introductory Java programming class with 35 students
- Wrote 3 exams, gave 2 lectures, and helped with grading homework assignments

Publications

An Efficient Local Search Algorithm for Correlation Clustering on Large Graphs

- International Conference on Combinatorial Optimization and Applications Dec 2023

Efficient Correlation Clustering Methods for Large Consensus Clustering Instances

- arXiv.org preprint: arXiv:2307.03818 [cs.DS] Jul 2023

Scalable Algorithms for Correlation Clustering on Large Graphs

- PhD Thesis, Boston University May 2023

Two Algorithms to Compute Symmetry Groups for Landau-Ginzburg Models

- arXiv.org preprint: arXiv:1802.06716 [math.AG] Jun 2018

An Isomorphism Extension Theorem for Landau-Ginzburg B-Models Feb 2018

- Communications in Algebra, Volume 46, Issue 8

Isomorphisms of Landau-Ginzburg B-Models Jun 2016

- Master's Thesis, BYU: All Theses and Dissertations, Paper 5882

Transposing Noninvertible Polynomials Jan 2016

- Rose-Hulman Undergraduate Mathematics Journal, Volume 16, Issue 2

Presentations

An Efficient Local Search Algorithm for Correlation Clustering on Large Graphs

- COCOA 2023, Honolulu, HI — Dec 2023

Scalable Algorithms for Correlation Clustering on Large Graphs

- Thesis Defense, Boston University — Apr 2023

Correlation Clustering: Introduction and Innovations

- Computer Science Seminar, Brigham Young University — Oct 2023

Scalable Algorithms for Correlation Clustering on Large Graphs

- Thesis Proposal, Boston University — May 2022

An Efficient Cluster-Improving Algorithm for Correlation Clustering

- Oral Exam, Boston University — May 2021

Continuous Facility Location Algorithms for k-Means and k-Median

- Algorithms and Theory Seminar, Boston University — Nov 2019

Primal-Dual Algorithms for Clustering and Feature Allocation

- Algorithms and Theory Seminar, Boston University — Oct 2018

Isomorphisms of Landau-Ginzburg B-Models

- Thesis Defense, BYU — May 2016
- Student Research Conference, BYU — Mar 2016
    - Session winner
- American Mathematical Society Section Meeting, CSU-Fullerton — Oct 2015
- BYU Student Research Conference — Mar 2015

- Mathematical Association of America Section Meeting, BYU — Mar 2015

Transpose Polynomials and Symmetry Groups

- Student Research Conference, BYU — Mar 2014
  - Undergraduate session winner
- Mathematical Association of America Section Meeting, UVU — Mar 2014

Characterizations of the Maximal Symmetry Group

- Mathematical Association of America MathFest, Hartford, CT — Aug 2013

Awards

Research Grants

- BYU Office of Research and Creative Activities Grant — Jan 2014
- BYU Harold B. Lee Library Student Research Grant — Oct 2013

Scholarships — Aug 2009

- BYU Heritage Scholar
- Robert C. Byrd Honors Scholar
- Utah Board of Regents Scholar

Programming Experience

Proficient: Java, Python

Intermediate: JavaScript, C++, C#