# Antares Chen

Undergraduate Student at the University of California Berkeley

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| Phone: | (301) 642-8620 |
| Github: | antaresc |
| Email: | antaresc@berkeley.edu |
| Homepage: | https://antaresc.github.io/ |


## Education

*B.A. Computer Science and Mathematics* — Expected May 2020
University of California Berkeley

## Academic Experience

Research Assistant — Bocconi University — 2019 – 2019
Advised by Prof. Luca Trevisan

- Study spectral sparsification lower bounds, cut sparsifier constructions for dense graphs, and tools from statistical physics to analyze cuts of random graphs.

Research Assistant — University of California Berkeley — 2016 – 2019
Advised by Aaron Schild

- Study electrical flows, graph sparsification, and applications towards constructing fast Laplacian solvers.
- Develop algorithms for efficiently simulating the abelian sandpile model on undirected graphs.

Advised by Prof. Satish Rao

- Studied experts, bandits, and online local learning.
- Studied using online optimization frameworks to recover planted structure.

Research Assistant — Berkeley Institute of Design — 2015 – 2016
Advised by Prof. Armando Fox

- Studied methods for clustering student code.
- Developed AutoStyle, an application that provides students automated coding style feedback.
- Deployed AutoStyle to classroom settings with +1500 students.

Research Assistant — Stanford University Computational Geometry Group — 2014 – 2014
Advised by Jonathan Huang

- Studied methods for clustering Fitch style proofs.

Research Assistant — University of Maryland College Park — 2013 – 2015
Advised by Prof. Aravind Srinivasan and David G. Harris

- Studied the probabilistic method and the algorithmic Lovász Local Lemma.
- Developed dependent rounding algorithms for solving covering integer linear programs.

## Industry Experience

Student Researcher — Google — 2018 – 2019
Member of the Data Commons project (link).

- Help curate an open source knowledge graph of public data sets.
- Implemented the Python API (Github) for querying the knowledge graph.
- Lead the DataCommons pilot in UC Berkeley's DS100 (blog post).

## Publications

### *Refereed Conferences*

1. "Teaching students to recognize and implement good coding style." Eliane S. Wiese, Michael Yen, Antares Chen, Lucas A. Santos, Armando Fox in *Proceedings of the ACM Conference on Learning at Scale 2017*, pp. 41-50.
2. "Partial resampling to approximate covering integer programs." Antares Chen, David G. Harris and Aravind Srinivasan in *Proceedings of the ACM-SIAM Symposium on Discrete Algorithms 2016*, pp. 1984-2003.

## Invited Talks and Abstracts

1. "Preliminary evidence for learning good coding style with Autostyle." Antares Chen, Eliane S. Wiese, Hezheng Yin, Armando Fox presented at *Learning with MOOCs 2016*

## Teaching Experience

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| Sp2019 | *CS170 Efficient Algorithms and Intractable Problems*<br>Undergraduate Student Instructor | University of California Berkeley |
| Su2017 | *CS375 Teaching Techniques for Computer Science*<br>Undergraduate Student Instructor | University of California Berkeley |
| Su2016 – Sp2018 | *CS61B(L) Data Structures and Programming*<br>(Head) Undergraduate Student Instructor | University of California Berkeley |

## Honors & Awards

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| 2014 | *Best Technical Presentation* Doolittle Institute's Mini-Urban Challenge |
| 2014 | *Governor's Citation for Promoting STEM Inclusiveness Through FIRST Robotics*<br>Office of Governor Martin O'Malley |
| 2013 | *Honorable Mention for Paper "Utilizing CNTFETs for Computer Design"*<br>Toshiba NSTA ExploraVision Essay Writing Contest |

## Community Activities

Founder — Undergraduate Theoretical Computer Science @ Berkeley (link) — 2018 – 2019

- Organized reading groups: *Convex Optimization and Maximum Flows*, *A Theorist's Toolkit*, *Approximation Algorithms*, and *Algorithmic Analysis Beyond the Worst-Case*

## Skills

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| Programming | Python, Java, C, C++, Matlab, Mathematica, HTML/CSS, LaTeX |