Jalex Stark

Curriculum Vitae

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Education and Employment

Jan 2019 –	**Quantitative Researcher**, *Jane Street Group*, New York City.
Winter 2018	**EECS Graduate Student**, *University of California, Berkeley*, On leave.
2013–2018	**B.Sc. Mathematics**, *California Institute of Technology*, Pasadena, GPA: 3.3/4.3.

Papers

Oct 2018	**Trading locality for time: certifiable randomness from low-depth circuits**, *with Matthew Coudron and Thomas Vidick*, Technical report, arxiv:1810.04233, QIP 2019.
Apr 2018	**Unconditional separation of finite and infinite-dimensional quantum correlations**, *with Andrea Coladangelo*, Technical report, arxiv:1804.05116, QIP 2019, best student paper prize.
Oct 2017	**Robust Self-testing for Linear Constraint Games**, *with Andrea Coladangelo*, Technical report, arXiv:1709.09267, QIP 2018.
Sep 2017	**Separation of finite and infinite-dimensional quantum correlations, with infinite question or answer sets**, *with Andrea Coladangelo*, Technical report, arXiv:1708.06522.

Contributed Talks

Jan 2018	**Robust Self-testing for Linear Constraint Games**, *QIP 2018*, Based on arXiv:1709.09267.

Research Funding

Spring 2017 – Spring 2018	**Research Assistant, Computing and Mathematical Sciences**, *Caltech*. Supported by Thomas Vidick through NSF CAREER Grant CCF-1553477
Summer 2017	**Mellon Mays Undergraduate Researcher**, *Caltech*, Advised by Thomas Vidick.
Summer 2016	**Mellon Mays Undergraduate Researcher**, *Caltech*, Advised by Martino Lupini.

Nov 2016   **Invited Participant, Focused Research Group**, *Banff International Research Station*.
QMA-completeness and probabilistic constructions for noncommutative graph homomorphisms.

Teaching

Jul 2017   **Pseudotelepathy via Group Representations**, *Canada/USA Mathcamp, 5 days*.
Based on arXiv:1708.06522

Jul 2015   **Ordinal Arithmetic**, *Canada/USA Mathcamp, 3-day mini-course*.
notes available at `http://www.jalexstark.com/notes/OrdinalArithmetic.pdf`

Fall 2017   **Teaching Assistant Ph/CS 219, Quantum Computation**, *Caltech*.

Fall 2016   **Teaching Assistant CS/Ph 120, Quantum Cryptography MOOC**, *Caltech*.

Spring 2016   **Teaching Assistant for CS 101, Special Topics: Modern Cryptograpy**, *Caltech*.

Spring 2015   **Teaching Assistant for CS 115, Programming in Haskell**, *Caltech*.

Summer 2015   **Teaching Assistant for Ma0, Introduction to Proofs**, *Caltech*.

Other Work

Summer 2018   **Intern, Quantitative Research Team**, *Jane Street Capital*.

Summer 2016   **Counselor**, *Bridge to Enter Advanced Mathematics*.
Taught three weeks of proof-based mathematics to underserved New York City seventh graders.

Summer 2014
Summer 2015   **Junior Counselor**, *Canada/USA Mathcamp*.
Summer 2017   (See Teaching.) With other undergrads, ran logistics of five-week camp for high schoolers. Sat on mentor hiring and student admissions committees, contributed to the 2015 qualifying exam.

Aug 2014–   **MATHCOUNTS Math Club Director**, *Walter Reed Middle School*.
Apr 2017   Taught after school once per week, hired other Caltech undergrads to expand program.

Undergraduate Service

Apr 2015 –   **Academic Coordinator**, *Caltech Undergraduate Math Club*.
Apr 2017   Recruited 15 different undergrad speakers over the course of my tenure. For each speaker, heard a practice talk and gave constructive feedback before their presentation to Caltech undergrads.

Fall 2015,   **Director**, *Caltech Harvey Mudd Math Competition*.
Fall 2016   As Director, fully organized a one-day math competition for 300 high school students from the west coast of the US and from China. Managed problem-writing and campus relations, etc.

Apr 2015 –   **Secretary**, *Caltech Board of Control*.
Mar 2016   Oversaw half of all academic dishonesty cases among Caltech undergraduates. Wrote official recommendations to the Dean's Office, according to guidelines of the Office of General Counsel.