# Noah Singer

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## Education

Spring 2022 (anticipated) **A.B. in Computer Science and Mathematics**, *Harvard University*, Cambridge, MA, GPA 4.00/4.00.

### Selected Coursework

*Computer science:* Computational Complexity†; Error-Correcting Codes†; Spectral Graph Theory†; Systems Security†; Advanced Machine Learning†; Operating Systems; Algorithms. *Mathematics:* Commutative Algebra†; Boolean Functional Analysis†; Algebraic Geometry; Measure Theory & Functional Analysis. († denotes graduate courses.)

## Papers

May 2021 **Streaming approximation resistance of every ordering CSP**, *Noah Singer, Madhu Sudan, and Santhoshini Velusamy.*
On ECCC. In submission.

Apr. 2021 **Point-hyperplane incidence geometry and the log-rank conjecture**, *Noah Singer and Madhu Sudan.*
On arXiv. In submission.

## Teaching

In the following courses, graded and hosted office hours and recitation sections:

- *CS 124: Data Structures and Algorithms* (Spring 2021)
- *CS 121: Introduction to Theoretical Computer Science* (Fall 2019, Fall 2020)
- *CS 161: Operating Systems* (Spring 2020)

In CS 121 and 124, organized advanced sections with weekly guest lectures.

## Internships

Summer 2021 **Research Intern**, *DIMACS REU*, New Brunswick, NJ (remote).
Working with Prof. Eric Allender at Rutgers University to study complexity of circuit minimization and related problems.

Summer 2019 **Software Engineering Intern**, *Airbnb*, San Francisco, CA.
Built a production data pipeline to discover and manage large quantities of search advertising keywords targeting Airbnb hosts, efficiently scaling up listing creation due to search ads by over 20% and generating tens of thousands of dollars in weekly revenue.

## Community

2020– **Peer Concentration Adviser**, *Computer Science, Harvard College.*

2020– **WiCS Mentor**, *Harvard Women in Computer Science.*

Spring 2019 **Volunteer**, *Digital Literacy Project.*
Taught basic programming in Scratch and Processing.js to middle school students in Allston.

## Skills

10+ years of programming experience; languages include Python, Java, C/C++, JavaScript, SQL, x86 assembly, HTML/CSS, and OCaml. Tools/frameworks include LaTeX, Django, Angular 2, PyTorch, and Git.

## Awards

Spring 2021 **Phi Beta Kappa, Alpha Iota of Massachusetts**.
Elected in group of 24 juniors from the Harvard College Class of 2022.

Summer 2020 **Herchel-Smith Fellowship**.

2019– **Certificate of Distinction in Teaching**.
Awarded by Harvard Office of Undergraduate Education on basis of instructor ratings in student evaluations. Overall ratings were: CS 121 Fall 2019, 4.83/5. CS 121 Fall 2020, 4.88.5

2018–2020 **John Harvard Scholar**.

## Talks

Apr. 2021 **The Goemans-Williamson algorithm**, *Harvard CS 124.5*.

Oct. 2020 **Relativization in complexity theory**, *Harvard Math Table*.

Apr. 2019 **How Hard is Multiplication?: Complexity bounds and Karatsuba's algorithm**, *Harvard Splash*.

Updated May 5, 2021.