

# Andrew Searns

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<https://github.com/Searnsy/>

Active Security Clearance: TS SCI w/ POLY

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## Objective:

Seeking full-time position in Computer Science and Mathematics with an emphasis on research-oriented problem solving.

## Education:

Rochester Institute of Technology – Fall 2016 to Fall 2020

BS/MS in Computer Science and BS in Computational Mathematics

Completed 6-year dual-degree program in 4.5 years

Graduated with Honors; Summa Cum Laude (3.90 GPA)

## Work Experience:

Student Researcher – Summer 2019

- Explored open problems in various fair division settings.
- Collaborated with researchers from Rensselaer Polytechnic Institute and University of Tokyo.
- Coauthored and submitted two research papers based on our findings.

National Security Agency – Summer 2018

- Prototyped fractal-based compression scheme for matrices and tensors.
- Implemented matrix arithmetic library using compression scheme in Java.
- Ported matrix library to a new data-centric computing architecture with C/Cilk.

National Security Agency – Summer 2017

- Developed distributed computing framework for streamed matrix factorizations of radio signals.
- Analyzed and documented patterns in tensor decompositions of radio signals.
- Simulated collection and network pattern among Raspberry Pis and a supercomputer.

National Security Agency – Summer 2016

- Explored data formatting and programmer interface for a new, undocumented meta-data feed.
- Prototyped use case analytics for a new meta-data feed including a way to determine efficiency of data collection and use by analysts.

Student Grader and Tutor – Fall 2017 to Fall 2019

- Tutor for Analysis of Algorithms and Computer Science Theory, Fall 2018 to Spring 2019.
- Student grader for Concepts of Computer Systems (Assembly Language class), Spring 2018 to Spring 2019.
- Student grader for Mechanics of Programming (C programming class), Fall 2017.

## Skills:

- Programming Languages: C, Cilk, Java, Python, MIPS Assembly, C++, SQL, HTML/CSS.
- Operating Systems: Windows 10, Raspbian Jesse, Mac High Sierra, CentOS, Ubuntu.
- Parallel and Distributed Algorithms and Lock-Free Thread Safety.

## Awards and Achievements:

- Computing Research Association Outstanding Undergraduate Researcher Honorable Mention.
- Presented in [ISAAC 2018](#), Jiaoxi, Yilan County, Taiwan, December 2018  
<https://drops.dagstuhl.de/portals/lipics/index.php?semnr=16094>.
- First undergraduate to present in the RIT Theory Canal Computer Science speaker series, [November 2018](#), [February 2018](#), [September 2019](#).
- Dean's List at RIT all 9 semesters attended, Fall 2016 to Fall 2020.
- Top 20 percent in 2017 and 2019 Putnam Exams.
- Honorable Mention in University of Rochester Math Olympiads.
- Second Place in Rochester Institute of Technology Math Olympiads.

## Published Research:

- Searns, A., & Hosseini, H. (2020). Fairness Does Not Imply Satisfaction (Student Abstract). Proceedings of the AAAI Conference on Artificial Intelligence, 34(10), 13911–13912.  
<https://doi.org/10.1609/aaai.v34i10.7228>
- Hosseini, H., Igarashi, A., & Searns, A. (2020, July). Fair Division of Time: Multi-layered Cake Cutting. Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence. Twenty-Ninth International Joint Conference on Artificial Intelligence and Seventeenth Pacific Rim International Conference on Artificial Intelligence {IJCAI-PRICAI-20}.  
<https://doi.org/10.24963/ijcai.2020/26>
- Ivona Bezáková, & Andrew Searns (2018). On Counting Oracles for Path Problems. In 29th International Symposium on Algorithms and Computation (ISAAC 2018) (pp. 56:1–56:12). Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik.  
<https://drops.dagstuhl.de/opus/volltexte/2018/10004/pdf/LIPics-ISAAC-2018-56.pdf>

## Activities:

- Co-organized math competition at RIT, including recruiting contestants, designing problems, grading, and reporting scores.
- Active solver of the RIT Fortnight Problems math challenge series.
- Social Media director for RIT Juggling Club.
- Treasurer for the RIT Argentine Tango club.
- Advanced-level (v8 grade bouldering) indoor rock climber and frequent acroyoga participant.
- Frequent responder to computer science, math, Harry Potter, and Lord of the Rings questions on Quora. <https://www.quora.com/profile/Andrew-Searns>