

# John Paul Ryan

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## Curriculum Vitae

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### Education

- 2017–present **PhD in Computer Science**, *Cornell University*, Ithaca, NY.  
Concentrating in Scientific Computing
- 2012–2016 **BA (Honors) in Mathematics and Computer Science**, *New York University*, New York, 3.86/4.00.  
Magna Cum Laude, Phi Beta Kappa,  
Math GPA: 3.92, Computer Science GPA: 3.94, Physics (Minor) GPA: 3.92

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### Academic Achievements

- Computer Science Prize for Academic Excellence - NYU Department of Computer Science
- Perley Lenwood Thorne Medal in Mathematics - NYU Department of Mathematics
- Presidential Honors Scholar - NYU College of Arts and Science
- Dean's Honors List (all four years) - NYU College of Arts and Science

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### Research Experience

- Summer **Courant Institute**, *Advisor: Miranda Holmes-Cerfon*, New York, NY.
- 2016–2017 Built computer simulations to investigate the dynamics of rolling spheres in a cylindrical dish driven by a circular, periodic motion. Our simulations matched experiments nicely, and allowed us to investigate the sensitivity of the system to parameters such as friction, density, and boundary size.
- August 2015 **Courant Institute**, *Advisor: Chee Yap*, New York, NY.  
Worked on a soft subdivision search algorithm for robot motion planning for disc, triangle, and link robots. Wrote animation in C++ using Qt Creator and OpenGL. See video demonstration on website, under Research.
- June - July **Auburn REU in Algebra and Discrete Mathematics**, *Advisor: Peter Johnson*, 2015 Auburn, AL.  
Spent two months intensively studying algebra and discrete mathematics, especially open and accessible problems. Achieved results in several open problem areas related to abundance indices and integral distance graphs. See publications below.

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## Teaching Experience

Fall 2015 - Spring 2016	Department Tutor for CS102 - Data Structures	NYU Department of Computer Science
Fall 2015	Grader for CS102 - Data Structures	NYU Department of Computer Science
Spring 2015 & 2016	Volunteer cSplash Lecturer	Courant Institute
Spring 2015	Department Tutor for Calculus I-III and Linear Algebra	NYU Department of Mathematics
Fall 2014	Grader for Calculus III	NYU Department of Mathematics
Fall 2013 - Fall 2014	SAT Prep Teacher	Kaplan Test Prep

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## Relevant Skills

Computer Languages:	C/C++, Java, Python, MATLAB, JavaScript, PHP, HTML/CSS
Experience With:	Unix/Linux, network programming and security, OpenGL, OpenCL, OpenMP, Qt
Spoken Languages:	English, Spanish, some Italian

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## Publications

- Ching-Hsiang Hsu, **John Paul Ryan**, and Chee Yap, "Path Planning for Simple Robots using Soft Subdivision Search," *Multimedia Exposition Proc. 32nd International Symposium on Computational Geometry*, Boston, MA. June 14-18, 2016.
- **John Paul Ryan**, "Coloring Blocks of Consecutive Integers to Forbid Three Distances," *Geombinatorics*, 25 (April, 2016), 168-178.
- Edna Jones and **John Paul Ryan**, "Theoretical Friends of Finite Proximity," *International Journal of Mathematics and Computer Science*, 10 (2015), 205-216.
- Peter Johnson, **John Paul Ryan**, "Coloring the Plane to Guarantee Rainbow Translates" *Geombinatorics*, (submitted).

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