

# John C. Kolesar

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📄 johnckolesar.github.io

## Education

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### Yale University

*Ph.D., Computer Science*

Advisor: Ruzica Piskac

Earned M.S. en route to Ph.D. in 2022

**New Haven, Connecticut**

*2020–2026 (anticipated)*

### Cornell University

*Bachelor of Arts with Distinction in All Subjects*

**Ithaca, New York**

*2016–2020*

Majors:

- Mathematics (Magna cum Laude, Computer Science concentration)
- Classics (Latin concentration)

Minors:

- Computer Science
- Philosophy

Cumulative Grade Point Average: 3.97

Computer Science GPA: 4.02

## Honors

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### Phi Beta Kappa

*Cornell University College of Arts & Sciences*

*2020*

### Nathan Hale Associates Fellow

*Yale Graduate School of Arts & Sciences*

*2021*

### Arts & Sciences Dean's List

*Cornell University*

*All available semesters*

## Graduate Course Work Performance

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Grade of H (maximum grade for Yale GSAS) in all graded graduate courses

## Research Interests

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- Formal Methods
- Program Verification
- Symbolic Execution
- Automatic Program Repair
- Software-Defined Networking
- Cryptography
- Competitive Programming

## Conference Publications

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- o Daniel Luick, John Kolesar, Timos Antonopoulos, William R. Harris, James Parker, Ruzica Piskac, Eran Tromer, Xiao Wang, Ning Luo. **ZKSMT: A VM for Proving SMT Theorems in Zero Knowledge**. *USENIX Security*, 2024 (To Appear).
- o John C. Kolesar, Ruzica Piskac, William T. Hallahan. **Checking Equivalence in a Non-strict Language**. *OOPSLA*, 2022.
- o Jialu Zhang, De Li, John C. Kolesar, Hanyuan Shi, Ruzica Piskac. **Automated Feedback Generation for Competition-Level Code**. *ASE*, 2022.

## Talks

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### **ZKSMT: A VM for Proving SMT Theorems in Zero Knowledge**

*New York University*

*May 2024*

## Poster Presentations

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### **Checking Equivalence in a Non-strict Language**

*Yale University*

*October 2023*

## Industry Work Experience

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### **Amazon Web Services**

*Applied Scientist Intern, New York City*

*Summer 2024*

Supervisor: Martin Schäf

### **Microsoft One Engineering System**

*Research Intern, Remote*

*Summer 2022*

Supervisor: Josh Becker

Mentor: Grant Holliday

### **Aretec Inc.**

*Big Data Software Application Developer*

*Summer 2018, Summer 2019*

Contractor for U.S. Securities and Exchange Commission

New York City (2018)

Washington, D.C. (2019)

## Teaching Experience

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### **Graduate Teaching Fellow at Yale University**

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#### **CPSC 458/558: Automated Decision Systems**

*Taught by Stephen Slade*

*Spring 2024*

#### **CPSC 323: Introduction to Systems Programming and Computer Organization**

*Taught by James Glenn and Jay Lim*

*Fall 2023*

#### **CPSC 484/584: Introduction to Human-Computer Interaction**

*Taught by Marynel Vázquez*

*Spring 2023*

#### **CPSC 435/535: Building an Internet Router**

*Taught by Robert Soule*

*Fall 2022*

#### **CPSC 433/533: Computer Networks**

*Taught by Anurag Khandelwal*

*Spring 2022*

<b>CPSC 323: Introduction to Systems Programming and Computer Organization</b> <i>Taught by Ruzica Piskac and Rob Brunstad</i>	<i>Fall 2021</i>
<b>Undergraduate Teaching Assistant at Cornell University</b> .....	
<b>CS 3110: Data Structures and Functional Programming</b> <i>Taught by Nate Foster</i>	<i>Spring 2020</i>
<b>CS 4820: Introduction to Analysis of Algorithms</b> <i>Taught by Eva Tardos</i>	<i>Fall 2019</i>
<b>CS 3110: Data Structures and Functional Programming</b> <i>Taught by Michael Clarkson</i>	<i>Fall 2018</i>
<b>CS 2112: Honors Object-Oriented Design and Data Structures</b> <i>Taught by Dexter Kozen</i>	<i>Fall 2017</i>

## Other Work, Research, and Volunteering Experience

<b>Cornell University</b> <i>Computer Science Research</i> Research Advisor: Nate Foster Subject: Software-Defined Networking with P4	<b>Ithaca, New York</b> <i>Fall 2019, Spring 2020</i>
<b>Tenley Achievement Program</b> <i>Office Manager</i>	<b>Washington, D.C.</b> <i>Summer 2017</i>
<b>Yale University Computer Science Department</b> <i>Graduate Student Advisory Committee Member</i>	<b>New Haven, Connecticut</b> <i>2023–2024 Academic Year</i>
<b>Yale University Computer Science Department</b> <i>New Ph.D. Student Mentor</i>	<b>New Haven, Connecticut</b> <i>2023–2024 Academic Year</i>
<b>National University of Colombia</b> <i>Web Chair for LPAR 2023</i>	<b>Manizales, Colombia (remote)</b> <i>June 2023</i>
<b>Squash Haven</b> <i>Volunteer Tutor (Computer Science, Mathematics)</i>	<b>New Haven, Connecticut</b> <i>Spring 2023, Fall 2023</i>
<b>Yale University Computer Science Department</b> <i>Website Manager for Formal Methods Meetup 2023</i>	<b>New Haven, Connecticut</b> <i>October 2023</i>
<b>Yale University Computer Science Department</b> <i>Ph.D. Student Buddy for Admitted Student Day</i>	<b>New Haven, Connecticut</b> <i>Spring 2022</i>

## Skills

- Proficiency in Java, C, C++, OCaml, Q, Haskell, Python
- Experience with JavaScript, TypeScript, Dafny, Coq, Standard ML, C#, Kusto
- Experience with SMT solvers, Excel, LaTeX, Unity, Blender, VirtualBox, Docker