

# Anakin Dey

## Curriculum Vitæ

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### Research Interests

Algebraic Combinatorics, Algebraic Geometry and Commutative Algebra, Computational Algebra, Algebraic and Fine-Grained Complexity, Algebraic Methods in Combinatorics, Combinatorial Optimization

### Education

Fall 2020 — **BSLAS Mathematics**, University of Illinois Urbana-Champaign  
Spring 2024 Minor in Computer Science  
GPA: 3.92 / 4.00, Graduation with Highest Distinction  
Deans List: Fall 2020, Fall 2021, Spring 2023, Fall 2023

### Publications

- 2023 **Optimizing a Model-Agnostic Measure of Graph Counterdeceptiveness via Reattachment**  
Anakin Dey, Sam Ruggerio, and Melkior Ornik  
Submitted, [arXiv:2311.15093](https://arxiv.org/abs/2311.15093)
- 2023 **Classifying Primitive Solvable Permutation Groups of Rank 5 and 6**  
Anakin Dey, Kolton O'Neal, Duc Van Khanh Tran, Camron Upshur, and Yong Yang  
Accepted Journal of Group Theory, [arXiv:2308.13043](https://arxiv.org/abs/2308.13043)
- 2022 **Post-Disaster Repair Crew Assignment Optimization Using Minimum Latency**  
Anakin Dey and Melkior Ornik  
IEEE International Smart Cities Conference 2022, [arXiv:2206.00597](https://arxiv.org/abs/2206.00597)

### Invited Talks

- 2024 **Classifying Primitive Solvable Permutation Groups of Rank 5 and 6**  
China-US Group Theory Conference 2024
- 2023 **Classifying Primitive Groups using Computer Algebra and Change Making**  
UIUC Department of Mathematics Undergraduate Friday Seminars
- 2023 **Classifying Primitive Solvable Permutation Groups of Rank 5 and 6**  
China Three Gorges University Algebra and Combinatorics Seminar
- 2022 **Post-Disaster Repair Crew Assignment Optimization Using Minimum Latency**  
IEEE International Smart Cities Conference 2022

### Research Experience

- Spring 2024 **Undergraduate Research Assistant**, [ICLUE](https://iclue.org/)  
Under Prof. Alexander Yong, University of Illinois Urbana-Champaign
- Summer 2023 **Undergraduate Research Assistant**, [REU in Algebra, Combinatorics, and Statistics](https://reu.math.texasstate.edu/)  
Under Prof. Yong Yang, Texas State University
- Fall 2021 — **Undergraduate Research Assistant**, [LEADCAT Lab](https://leadcat.org/)  
Fall 2023 Under Prof. Melkior Ornik, University of Illinois Urbana-Champaign

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## Student Organizations

**Founder and President**, ACM [\*SIGma\*](#)

Special Interest Group in Math and Algorithms

**Admin**, ACM [\*SIGPwny\*](#)

Special Interest Group in Cybersecurity

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## Teaching Experience

*Spring 2021* – **Undergraduate Course Assistant**, University of Illinois Urbana-Champaign

*Spring 2024* ○ CS 225H — Honors Data Structures

*Spring 2024*

Course Assistant

○ CS 374 — Introduction to Algorithms and Models of Computation

*Spring 2022 — Fall 2022*

Course Assistant

*Fall 2023*

Course Assistant

○ CS 173 — Discrete Structures

*Spring 2021 — Spring 2022*

Course Assistant

*Fall 2022 — Spring 2024*

Head Course Assistant

○ CS 475 — Models of Computation

*Spring 2023*

Course Assistant

○ CS 125 — Introduction to Computer Science

*Spring 2021*

Course Assistant

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## Professional Experience

*Summer 2022* **Software Engineering Intern**, CME Group

*Summer 2021* **Software Engineering Intern**, SitelQ

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## Selected Coursework

Math 490 The Symmetric Group

Math 500 Abstract Algebra I

Math 501 Abstract Algebra II

Math 502 Commutative Algebra

Math 503 Geometric Group Theory

Math 511 Introduction to Algebraic Geometry

Math 518 Differentiable Manifolds I

Math 581 Extremal Graph Theory

CS 473 Algorithms

CS 475 Models of Computation

CS 598TMC Algorithms from the Fine-Grained Perspective

CS 598MAF Algebraic and Geometric Complexity Theory

CS 598TH1 Advances in Theoretical CS