

Ezekiel Cochran

Curriculum Vitæ

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EDUCATION

- B.S. Mathematics, pending 2024, LeTourneau University
- B.S. Computer Science (Math Concentration), pending 2024, LeTourneau University
- Minor in Physics, pending 2024, LeTourneau University

RESEARCH INTERESTS

Number Theory, Complex Analysis, Cybersecurity, Machine Learning. My research interests encompass a diverse range of fields, and their practical applications. I am particularly intrigued by the intersection of the above topics in the context of new models of computing, and how they can enhance the security and efficiency of technological systems. Additionally, I am actively exploring the evolving role of machine learning in these domains and its potential to drive innovative solutions and advancements.

PUBLICATIONS

Cochran, E., Dawsey, M.L., Harrell, E. et al.

Bijections, generalizations, and other properties of sequentially congruent partitions.

Ramanujan J (2023). <https://doi.org/10.1007/s11139-023-00728-y>

ACADEMIC SCORES

GPA	3.87
GRE	332
Putnam	10
SAT	1510

PRINCIPAL COURSES

Computer Science

- COSC 2203 Data Structures
- COSC 3503 Operating Systems
- COSC 3603 Networks & Data Communications
- COSC 3523 Analysis of Algorithms
- COSC 4603 Computer Theory
- COSC 4103 Computer Graphics

Mathematics

- MATH 4103 Real Analysis
- MATH 4963 Topology (pending spring 2024)
- MATH 3703 Abstract Algebra
- MATH 2303 Linear Algebra
- MATH 4403 Numerical Analysis (pending spring 2024)
- MATH 3903 History of Mathematics
- MATH 4953 Complex Analysis
- MATH 2203 Differential Equations
- MATH 3603 Mathematical Modeling
- MATH 2503 Logic, Sets, and Proofs
- MATH 3403 Statistics
- MATH 2023 Calculus 3

Physics

- PHYS 3214 Relativity & Quantum Theory
- PHYS 4953 Mathematical Methods in Physics
- PHYS 4253 Advanced Quantum Mechanics (pending spring 2024)
- PHYS 3951 Introduction to Research

HONORS AND AWARDS

- President of Kappa Zeta Chi
- LeTourneau University President's List
- ICPC - second place within division
- Commended National Merit Scholar

PROFESSIONAL EXPERIENCE

Collins Aerospace

- **Software Engineer Intern** (Summer 2024)

In the summer I will work with the cybersecurity group at Collins Aerospace, focusing on secure algorithms, and algorithms resistant to quantum computing attacks. This is a somewhat vague description because the work involves sensitive technologies and information.

LeTourneau University

- **Resident Assistant** (2022 - 2024)

I serve as the resident assistant for Kappa Zeta Chi, a society with an independent house at LeTourneau University. I am responsible for making sure the house is well taken care of, as well as serving as ex officio member of all committees, presiding over all executive meetings, authorizing all expenditures, and taking care of any necessary disciplinary action.

- **Math Lab Supervisor** (2022 - 2024)

I tutor undergraduate students on a drop in basis during math lab, helping with any level of LeTourneau mathematics class.

UT Tyler

- **Number Theory Researcher** (Summer 2022)

I worked with a team of scholars at UT Tyler to explore, verify, and publish new results in number theory. This was part of an NSF-funded REU.

Other Summer Jobs

- **Farmhand** (Summers 2020, 2023)

I worked at two different family farms over two summers, maintaining the property and working on odd projects. These included sanding and painting a barn, setting up a turn-down foundation, putting up fencing, and more, as well as taking care of the animals and other maintenance work.

- **CNC Machine Operator** (Summer 2021)

I worked at Claude's Accurate Machining, operating and repairing CNC mills.

REFERENCES

Cory Krause, Ph.D.
Chair and Professor, Department of Mathematics
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Assistant Professor, Department of Mathematics
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