

Yoav Binyamin

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EDUCATION

Texas A&M University

Bachelor of Science in Mathematics (with Honors)
College of Arts & Sciences

College Station, Texas

December 2026

Current GPA: 4.00/4.00 (Dean's Honor Roll)

Relevant Coursework: Combinatorics, Machine Learning, Integration and Measure Theory[^], Modern Algebra I/II[^], Metric Space Analysis[^], Stochastic Calculus^{*}, Mathematical Probability, Partial Differential Equations, Research Seminar (Mathematics)[^], Waves and Optics, Intro to Digital Systems Design, Program Design and Concepts (C++).

Current Coursework: Real Variables I^{*}, Harmonic Analysis^{*}, Information Theory^{*}, Combinatorics^{*}.

(* - graduate credit, ^ - honors credit, ' - audited)

Keller High School

Keller, Texas

May 2024

Cumulative GPA: 3.97/4.00 (Highest Ranking Graduate)

RESEARCH

PYRANIM

Author

College Station, Texas

January 2026 – Current

- A work-in-progress analysis of a combinatorial game I invented, heavily inspired by nim.
- **Combinatorial Game Theory:** Leading the effort in finding the winning strategy and proving patterns in the sequence of Sprague-Grundy numbers based on the pyramid's starting size.
- **Combinatorics:** Finishing up a paper on finding the total number of game states up to symmetry for each pyramid size.
- **Programming:** We coded a digital version of the game in Python to compute nimber values and states up to isomorphism.
- **Presentations:** Student Research Week 1st Prize (Mar 2026), 9th TX-LA Undergraduate Math Conference.

PROJECTS

SPECTRAL THEOREM

Author

College Station, Texas

January 2026 – May 2026

- A project for MATH 482 (Honors) – Research Seminar, focused on understanding and proving the finite-dimensional spectral theorem and the compact version of the infinite-dimensional spectral theorem.
- **Presentation:** Presented 4 separate talks to undergraduate students unfamiliar with complex inner products, metric spaces, and adjoints with the purpose of introducing them to the topic and its nuances, as well as proving the two theorems.

TECHNICAL EXPERIENCE

SOMTECH MIRAGE for the University Rover Challenge (URC)

Power Distribution Lead / Electrical Team Co-lead

College Station, Texas

August 2024 – May 2026

- **PCB & Schematic Design:** Designed fuse-protected filtered backplane using Altium CAD tools and Saturn PCB Toolkit, managing 36V battery distribution to motors, with DC-DC converters stepping voltage down to 12V and 5V for communication modules (TEENSY, JETSON) and spectroscopy modules.
- **Component Selection & Specification:** Selected and evaluated 100+ components (power modules, switching chips, voltage regulators, connectors, passive components) to meet project requirements and specifications.
- **Team Leadership & Mentorship:** Mentored 3+ team members on PCB design best practices, schematic organization, and design-for-manufacturability principles.
- **Quality Assurance:** Reviewed soldering kit designs and assisted in creating two kits for student population distribution, ensuring manufacturability and usability.
- **Project Management:** Managed team workflow and task tracking using Altium's project management features, maintaining clear documentation for ongoing electrical system development.
- **System Integration:** Managed development of the battery management system, lighting circuits, emergency shutoff switch, and slip ring mechanisms for extended rover electrical architecture.

OUTREACH

Unofficial Putnam Practice Club (UPPC)

Founder & Organizer

College Station, Texas

January 2025 – Current

- **Curriculum Development:** Established weekly 3-hour problem-solving sessions following "Putnam and Beyond," with consistent attendance of 4+ members.
- **Problem-Solving Practice:** Worked through 90+ advanced mathematics problems, solving approximately half.

- **Competition Preparation:** Administered 10+ full-length Putnam practice exams across two semesters, analyzing solutions and identifying areas for improvement.

AWARDS

- Passed the August 2026 Algebra I Qualifying Exam at Texas A&M University.
- Classroom Excellence Award for Algebra I, Algebra II, Metric Space Analysis, Integration and Measure Theory (Madhava Prize), and Research Seminar (Mathematics).
- Placed #1 in the undergraduate computational and data science category for Texas A&M's Student Research Week, 2026 (presented PYRANIM).
- President's Endowed Scholarship, National Merit Recognition Award.
- Elbit Dependent Scholarship, Sheila & Robert Templeton Scholarship.
- Highest Ranking Graduate (high school), AP Scholar with Distinction (high school).

LANGUAGES & BACKGROUND

Languages: English, Hebrew (native proficiency).

International Background: immigrated from Israel at age 10.

Citizenships: United States, United Kingdom, Israel.