

Yoav Binyamin

+1 (682) 246-6307 • Keller, TX • yoav.binyamin001@gmail.com

EDUCATION

Texas A&M University

*Bachelor of Science in Mathematics
College of Arts & Sciences*

College Station, Texas

May 2028

Current GPA: 4.00/4.00

Keller High School

Keller, Texas

May 2024

Cumulative GPA: 3.97/4.00

Honors: Math Honors, National Merit Finalist.

Relevant Coursework Completed: Combinatorics, Metric Space Analysis, Measure Theory, Research Seminar, Machine Learning, Modern Algebra I/II, Program Design and Concepts (C++), Mathematical Probability, Partial Differential Equations, Waves and Optics, Intro to Digital Systems Design.

Audited: Stochastic Calculus.

Current Coursework: (Graduate courses) Information Theory, Harmonic Analysis, Real Variables I, Algebra I, Combinatorics.

RESEARCH

PYRANIM

Author

College Station, Texas

January 2026 – Current

- A work-in-progress analysis of a combinatorial game heavily inspired by nim.
- Presented at Texas A&M's Student Research Week, winning first place in undergraduate Computational and Data Science.
- Presented at the TX-LA Undergraduate Research Conference at LSU.
- **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:** Assisting my co-author with finding the total number of non-isomorphic states for each pyramid size.
- **Computer-Assisted Results:** We have coded a digital version of the game to compute number values and states up to isomorphism, assisting with our conjectures and reasoning.

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 custom battery and lighting circuits for extended rover electrical architecture.

LEADERSHIP & COMMUNITY INVOLVEMENT

Unofficial Putnam Practice Club (UPPC)

College Station, Texas

Founder & Organizer

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 70+ advanced mathematics problems, solving approximately half.
- **Competition Preparation:** Administered 8+ full-length Putnam practice exams across two semesters, analyzing solutions and identifying areas for improvement.

TECHNICAL SKILLS

Programming Languages: Python, C++, C.

Machine Learning Frameworks: PyTorch.

Additional: LaTeX, Excel.

MISCELLANEOUS

Academic Awards: Dean's Honor Roll, President's Endowed Scholarship, Classroom Excellence Award for MATH 415H (Algebra I) and MATH 446H (Metric Space Analysis), National Merit Recognition Award, Elbit Dependent Scholarship, Highest Ranking Graduate (high school), AP Scholar with Distinction (high school).

Competition Experience: Putnam 2024 (13/120), Putnam 2025 (10/120).

LANGUAGES & BACKGROUND

Languages: English, Hebrew (native proficiency).

International Background: immigrated from Israel at age 10.

Citizenships: United States, United Kingdom, Israel.