Miriam Lerner

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EDUCATION

Tulane University New Orleans, LA
Master of Science: Electrical Engineering **Graduation:** Spring 2027
Bachelor of Science and Engineering: Engineering Physics, ABET Accreditation Spring 2026
Minors: Mechanical Engineering **GPA:** 3.854
Relevant Coursework: Thermodynamics, Photonic Materials and Devices, Semiconductor Devices, Feedback and Control Theory
Activities: SWE, Theta Tau, Makers and Robotics Society, Tulane Theater and Dance Department, WTUL Progressive Radio
Honors: Tau Beta Pi, Honors Scholars Program, Merit Scholarship($18,000 per year), Dean's List, CELT Grant Award

PROFESSIONAL EXPERIENCE

Tulane University Makerspace - *Fabrication Technician and CNC Mill Specialist* *August 2023 – Present*
- Managed and maintained CNC mill operations; trained 50+ users in machine setup, calibration, and safe operation
- Troubleshot mechanical, alignment, and tooling issues, ensured reliable performance of CNC, laser cutters, and 3D printers
- Provided guidance on rapid prototyping workflows; assisted researchers with design and fabrication for engineering projects

Tulane University - Escarra Photonic Materials and Devices Lab - *Undergraduate Research Assistant* *August 2024 – Present*
- Developed techniques and structures for CVD growth, design, and transfer of monolayer heterostructures for IC devices
- Conducted spectroscopy for material characterization; analyzed experimental data to evaluate device-quality metrics.
- Assisted in infrastructure setup for new growth methods; reviewed technical documentation and manuals to configure tools safely
- Prepared technical reports and contributed to competitive research grant proposals

WTUL Progressive Radio Station - *Technical Director and DJ* *May 2024 – Present*
- Oversaw all station technical operations, ensuring continuous on-air performance for a 24/7 broadcast system
- Diagnosed and repaired equipment issues, managed system resets, and maintained backup infrastructure for uninterrupted service.

Camp Kee Tov of Congregation Beth El - *Program Director* (2024,2025)*, Senior Counselor* (2023) *May 2023 – August 2025*
- Supervised 15 staff and coordinated programs for 50+ participants daily; led logistics for field trips and large-scale events
- Developed structured activity systems and managed safety protocols; Communicated daily performance notes and evaluations

LEADERSHIP EXPERIENCE

Tulane Society of Women Engineers Executive Board
President *(2025-2026),* ***Vice President; Outreach Coordinator; Freshman Representative*** *September 2022 - Present*
- Led the 10-person Executive board and organized social, professional, and outreach-based events for our chapter of 200 students
- Pioneered new outreach events for local high-school and middle-school involvement in STEM, raising over $1000 in a single event
- Organized our chapter's yearly SWE panel, featuring 5 industry professionals with diverse backgrounds and experiences
- Led activities and competitions for Tulane's STEM educational events for 5th-7th graders, attended by 200+ students

Theta Tau Professional Engineering Fraternity Executive Board - *Scribe* *(2025-2026),* ***Member*** *September 2022 - Present*

PROJECTS

Capstone Team Design | Hybrid Concentrator Photovoltaic-Thermal Receiver - *Thermal Lead* *August 2025 - Present*
- Led thermal modeling for a hybrid solar-concentrator system using COMSOL Multiphysics.
- Performed theoretical efficiency, heat-transfer, and material-reliability analysis to guide design iterations.
- Prototyped and tested receiver components; developed machining and assembly workflows for accurate optical and thermal testing.

ErGO! *August 2023 - December 2023*
- Designed, constructed, and tested an affordable, portable, comfortable, and ergonomic chair
- Used CAD to model, run FEA testing, and rapid prototype elements of the design
- Built 2 prototypes, both of which displayed human-centered design and durability over multiple months

The Road Not Taken - A Choose Your Own Adventure Game *March 2024 - May 2024*
- Wrote, designed, and implemented a complex text-based role-playing game in MATLAB with over 25 paths and outcomes

SKILLS

Testing & Characterization: Reliability testing, Thermal analysis, Spectroscopy, IC/2D-material sample handling, Metrology fundamentals
Technical: CNC Mill and Lathe, Waterjet, CVD, Wood and Metal Shop Tools, Spectroscopy, CPR and First Aid, Spanish (Conversational)
Software: COMSOL, MATLAB, Python, CAD software, Vector Software, Tormach Systems, Procreate, Orcaslicer, QLab, ETC Systems

PERSONAL INTERESTS

Knitting, Skiing, Modern Dance, Guitar, Piano, Alto Saxophone, Theater Design, Carpentry, Hiking, Camping, Rock Climbing, Cooking