Eddie Tang

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Education

University of Illinois Urbana-Champaign — Urbana, IL
Bachelor of Science in Electrical Engineering — *Aug. 2025 – May 2029*
Minor in Computer Science & Semiconductor Engineering

Montgomery High School (MHS) — Skillman, NJ
High School Diploma | *GPA:* ***3.92*** — *Sept. 2021 - Jun. 2025*

Projects

Spaceshot Avionics | *Illinois Space Society* — October 2025 – Present
- Spearheading GATOR, an improved ground station and power distribution PCB to track rocket position and adjust Yagi antenna direction w/ servos, improving tracker accuracy with tilt and servo jitter correction.
- Designing and soldering CAM-MK3, a PCB used to transmit live camera feed/video at 915 MHz/5.8GHz to ground station. Testing both analog and digital transceivers and amplifiers for improved transmission success and quality by creating different PCBs.
- Operated ground station in LUNA rocket launch by wiring SMA cables, constructing Yagi antennas, and maintaining stable radio communication. Achieved successful launch and recovery, reaching apogee at 13,000 ft.

FireJams | *Python, Tkinter, Pydub, Threading, Socket.io, PyAudio* — July 2025
- Built a cross-platform, fully native Python desktop app enabling friends to stream and sync music.
- Engineered a custom Socket.IO client-server-room model with PyAudio + Pydub audio chunk streaming and voice-activated avatars; built sleek UI with Tkinter using custom-drawn images and transparent window layering.
- Optimized queue performance by threading internal `spotdl` shell commands to download songs asynchronously, reducing wait times from 5000ms to near-instant, asynchronous loading.
- Awarded Top 10 Overall at HackUnitedv5, with 1244 participants

Genibook/Zenesus | *Go, Colly, Gin, Python, Flask, Beautiful Soup, Flutter, Heroku* — July 2022 – June 2025
- Developed and open-sourced a full-stack gradebook viewer that web-scraped data from school's Genesis grade-book and displayed it via a Flutter app; ensured zero backend data retention for user privacy.
- Improved backend API scraping efficiency from ∼30s (Selenium + Flask) → ∼20s (BeautifulSoup + Flask) → ∼11s (Go Colly + Gin), reducing load time by >50%.
- Rebuilt frontend with Flutter Material 2.0 UI in Genibook with optimized project responsiveness and loading
- Launched app on Play Store and App Store, gaining a total of 100+ installs.

Calls4Mental | *Python, Tkinter, OpenAI Whisper, Pydub, Threading* — Sep 2024
- Built multi-threaded tkinter-based desktop AI-therapist conversation app that uses threading to process camera+microphone → whisper → LLM → text-to-speech → lip-synced-avatar pipeline.
- Awarded 1st Place Overall at Apple Hacks, with 285 participants.

Experience & Leadership

Research Assistant, Mechanical and Aerospace Engineering Department | *Rowan University* — Summer 2025
- Investigated effects of line defects in thermoelectric materials on lattice thermal conductivity using MD sims.
- Employed Green-Kubo method to calculate thermal conductivities from heat flux autocorrelation functions.
- Reduced simulation-to-data turnover times by creating Slurm workflow with Matplotlib, LAMMPS, and ASE.
- Lead author on in-preparation manuscript investigating line defect effects on thermal conductivity in Si and Ge.

Research Intern, Princeton Laboratory Learning Program (LLP) | *Princeton University* — Summer 2024
- Co-authored a peer-reviewed publication in ACS Energy Letters (Impact Factor: 19.3).
- Performed DFT calculations with VASP on WO_3 surfaces to advance plasma-assisted NH_3 synthesis research.
- Elucidated simulation data through custom Slurm workflow using ASE, Matplotlib, and NumPy in Python.
- Increased DFT simulation speeds by using DeepMD-kit to create ML force fields.

Co-President, Computer Science Club | *MHS* — Sept. 2023 – Jun. 2025
- Directed MontyHacks VII (in-person): grew attendance by 92% from MontyHacks VI to 73 attendees from 91 signups, raised $39K in prizes incl. $2.1K cash, led 10-member team (2 core), and created all branding/media.
- Directed MontyHacks VIII (hybrid): managed 69 participants from 85 in-person/remote signups, raised $3.2K in prizes incl. $850 cash, and oversaw event execution with 25 Devpost submissions.

Technical Skills

Programming Languages: Java, Python, C/C++, Dart, Bash, JSON
Frameworks: Flutter, Material-UI, Flask, PyTorch, DeepMD-kit
Developer Software/Tools: Git, Insomnia, Firebase, Vercel, Heroku, Pandas, NumPy, Matplotlib, OpenCV, Scikit Learn, KiCAD, OnShape, Platform-IDE, VASP, LAMMPS
Fluent Languages: English, Chinese