

Ethan Pravato

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EDUCATION

Purdue University, Edwardson School of Industrial Engineering West Lafayette, IN
B.S. Industrial Engineering *Expected May 2028*
Relevant Coursework: Introduction to Aerospace Design (aircraft sizing, mission analysis, MATLAB weight & performance modeling); Graphical Communication (Siemens NX, Teamcenter PDM, engineering drawings & GD&T)

TECHNICAL SKILLS

Programming & AI: Python, C, MATLAB, SQL; Anthropic (Claude) API, LLM tool & agent integration, Git & GitHub
AI-Assisted Development: Ship production applications using FastAPI, Streamlit, PostgreSQL/SQLite, and React/React Native through AI-assisted workflows
Process & Analysis: Lean Six Sigma Green Belt, time & motion study, throughput and bottleneck analysis, statistical analysis (IBM SPSS, Excel), data visualization, ArcGIS
CAD & Manufacturing: SOLIDWORKS, Siemens NX, Ansys, Autodesk Inventor / Fusion / Civil 3D / Revit, Teamcenter PDM, GD&T, G-code & CNC milling

EXPERIENCE

H2M Architects and Engineers Melville, NY
Water/Wastewater Engineering Intern (AI Automation Initiative) *June 2026 – August 2026*

- Independently designed and built 4 AI tools in one summer that automated real firm workflows, covering watermain quantity takeoffs, field inspection, project-plan drafting, and historical bid analysis.
- Earned selection as the only intern on H2M's AIR (AI Readiness) Committee, the firm's cross-divisional group building and evaluating AI solutions company-wide.
- Self-initiated the Watermain Takeoff Calculator, which pulls true 3D pipe geometry from Civil 3D to auto-compute fittings, valves, pricing, and restoration quantities, replacing manual Bluebeam tracing. The most-used tool built, saving an estimated \$8,100/year at \$0 operating cost.
- Built an LLM-powered project plan generator for the QA/QC team that drafts H2M's project plan from source documents. On track to cut what can be an 8-hour manual process to roughly 1 hour for 50+ PMs firm-wide.
- Built a Claude API and SQLite tool for querying 25 years of H2M's historical bid data.
- Shipped a React/TypeScript iPad field app (GPS basemap markups, AI-polished inspection photo captions), now in active field beta.
- Supported live projects across the full lifecycle, including pre-design field surveys, DOH submittals, bid tab prep, construction administration, and on-site construction observation, which included field-resolving an unexpected asbestos pipe encounter and CAD-drafted project closeout record maps.

Nelson + Pope Melville, NY
Civil Engineering Intern *June 2024 – January 2025*

- Produced base maps for utility, roadway, drainage, and sewer infrastructure in Autodesk Civil 3D, and evaluated on-site drainage systems with a team of interns to inform roadway and drainage improvement designs.

Designations Inc. Hicksville, NY
Mechanical Engineering Intern *June 2023 – August 2023*

- Ran time studies on CNC milling operations to locate throughput bottlenecks, cutting 1,000+ machine-hours per machine, and designed a product with SOLIDWORKS that eliminated a recurring defect across thousands of milled parts.

Freelance Drone Operator Massapequa, NY
Owner and Operator, solo aerial media business *July 2020 – Present*

- Built a solo aerial media business to \$11,000+ in revenue licensing footage to Daily Mail, NewsNation, and ABC News (one clip used in a Netflix documentary), owning every part of the operation from client acquisition to post-production.

ADDITIONAL PROJECTS & LEADERSHIP

Purdue Undergraduate Rocket Propulsion Lab (PURPL), Pumps Team August 2025 – Present

- Designing the kerosene impeller for a gas-generator-cycle turbopump feeding a 5,000 lbf LOX/kerosene engine, modeling blade geometry and flow performance in CFTurbo and translating it into manufacturable geometry in Siemens NX. Also manufacturing the matching inducer, machining and integrating the hardware to meet tight tolerance, strength, and interface requirements. Currently iterating into V2 on a team pursuing the first undergraduate turbopump hot-fire.

Campus Hot Mic / Boiler Hot Mic, Co-Founder November 2025 – Present

- Co-founded a media brand with roughly 10,000 followers generating 50k to 100k+ views per video, and replicated it as a multi-campus network running sponsored brand campaigns.

Vend Smart, Co-Founder, IoT Startup 2026 – Present

- Co-founding a fleet-monitoring startup for vending operators with a technical co-founder building the hardware (Arduino and IR-sensor retrofit kit) while I own the React Native operator app and go-to-market. Pitching real operators on a \$1,500 retrofit against \$10,000+ for a new connected machine, with a model projecting 15 to 25% fewer service trips.

Alpha Epsilon Pi Fraternity, External Relations Chair December 2024 – Present

- Manage an \$8,000+ annual budget and lead a committee running 30+ events per year (some 500+ attendees), negotiating performer and vendor contracts.

Boy Scouts of America, Eagle Scout, Bronze Palm; Senior Patrol Leader May 2015 – December 2023