

JAMES OOSTERHOUSE

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EDUCATION

University of Michigan, College of Engineering

Ann Arbor, MI | Expected May 2027

B.S.E. Robotics Engineering, Concentration in Human-Robot Interaction • Minor in Coaching & Leadership • GPA: 3.6

Relevant Coursework: Human-Computer Interaction, Intro to AI, Full-Stack Robotics, Human-Robot Interaction, Human-Robot Systems, Engineering Statistics, Robot Controls, SLAM & Navigation, Quantitative Human Motion, Marine Robotics, Operations Modeling

EXPERIENCE

NASA Jet Propulsion Laboratory

Pasadena, CA | May 2026 – Aug 2026

Ethnographic Software Engineering Intern

- Evaluated the effectiveness of Faro, a GenAI analysis tool, for Mars Science Laboratory (Curiosity rover) downlink operations through an embedded ethnographic study of expert and novice mission operators
- Proved a statistically significant mistrust of Faro among expert operators, identifying a 67% difference in trust between experts and novices, and delivered a 5-point recommendation plan to prepare Faro for mission-critical use
- Developed a custom gaze tracking tool using OpenFace 2.0 to map user study participants' eyes onto the screen, generating heatmaps and deterministic measurements of tool utilization rates for expert and novice mission operators

SYZYGY.services

Ann Arbor, MI | Aug 2025 – Present

Founder & CEO

- Founded and scaled an AI consulting firm shipping agentic AI products end-to-end for 15+ business clients, owning problem definition, rapid prototyping, human-in-the-loop workflows, stakeholder feedback, and production deployment
- Designed and deployed web apps, data pipelines, and AI-driven workflows with TypeScript, React, and AWS, using LLM APIs, prompt design, and RAG to drive 30–40% operational efficiency gains across client teams
- Recruited and led a 6-person team, tested agent releases with LLM-as-judge scoring and trace analysis before client launches, and advised executives on AI strategy, explaining technical tradeoffs to business stakeholders

Koops Automation Systems

Holland, MI | Feb 2023 – May 2026

4x Intern: Controls & Project Engineering | Business Development & AI Integration

- Proposed and built KoopsGPT, a custom agentic LLM suite running in production for 40+ employees, wiring LLM APIs and RAG over enterprise data to automate quoting, contract review, and risk analysis, saving 4,000+ hours per year
- Secured \$3M+ in new automation projects through bid packages, conceptual designs, financial justifications, and ROI analysis, ranking 3rd of 15 on the summer sales team
- Founded and scaled the “Bot in the Lot” STEM expo from 4 to 15 teams and 400+ attendees, directly generating three full-time hires for the company

Michigan Engineering Consulting Group

Ann Arbor, MI | Jan 2024 – Present

VP of Finance & AI Strategic Lead, Founding Member

- Directed 5 consulting projects in market analysis, operations strategy, and AI implementation, leading 8 consultants for clients from startups to \$100M ARR firms
- Advised an industrial automation client on controls infrastructure and a GenAI rollout that saved 10% of time per project

University of Michigan Robotics Department

Ann Arbor, MI | Jan 2024 – Present

MBot Lab Researcher, Instructional Aide & Ambassador

- Mentored 65+ students in C++ and AI development across U-M and three HBCUs; presented to 100+ prospective students

PROJECTS

- **TRIAGE (NASA JPL):** Solo-built a deterministic and LLM-based root cause analysis dashboard for the Mars Sample Return helicopter, winning the JPL hackathon's Mission Critical Award for the best JPL solution; utilizing fine-tuned internal local models, TRIAGE combined deterministic statistics and GenAI to produce narratives around repeatable data
- **SPECINATOR (SYZYGY):** Built an AI decision-support tool for an electrical engineering firm's business development team, cutting document intake time from 15 to 4 minutes per document while raising accuracy from 92% to 98%
- **Robotic T-Shirt Cannon:** Led the design of a mobile robot with a 150 psi CO₂ firing system reaching 250+ feet, an 8-wheel drivetrain, and a 2-DOF turret, managing a \$6,000 budget and a 6-person team for live marketing events
- **BB-8 Style “Ballbot”:** Engineered a self-balancing ballbot on a 3-omniwheel base driven by Raspberry Pi and Pico controls

AWARDS

- **NASA Shining Star Award:** one of 4 interns selected from 1,200+ across all NASA centers for exemplary contributions to NASA
- **“James Oosterhouse Maroon & White Award”:** created in my honor by Holland Christian Athletics to recognize servant leadership, team-first mentality, and character
- **FIRST Leadership Award:** Michigan winner and World Championship finalist, awarded to 10 of 13,000+ Michigan students for demonstrated student leadership

SKILLS

AI Development: Agentic systems, LLM APIs (OpenAI API), prompt design, RAG, n8n, human-in-the-loop workflows

Evaluation & Research: LLM-as-judge, trace analysis, trust calibration, ethnographic field research, statistical analysis

AI Coding Tools (daily use): Claude Code, Cursor, GitHub Copilot, OpenAI Codex

Languages & Web: Python, TypeScript / JavaScript, C++, SQL, Java, MATLAB, React, REST APIs, AWS, Docker, GitHub