

# Benjamin Helfand

ben.l.helfand.30@dartmouth.edu

linkedin.com/in/benjamin-helfand-2527402b2 | github.com/cgvhbjk

## EDUCATION

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**Dartmouth College** | Hanover, NH | B.S. Applied Mathematics | Expected May 2030

**Bellarmine College Prep** | San Jose, CA | ACT: 36/36 | UW GPA: 3.92/4.00

**CIT Chalmers X**: Model-Based Automotive Systems Engineering (vehicle-dynamics simulation).

## ENGINEERING/SOFTWARE EXPERIENCE

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**University of Illinois Urbana-Champaign**, Men's Basketball Analyst | June 2026 - Present | Remote

- Build statistical models in Python for a production tool six coaching staff use weekly to answer scouting and recruiting questions; own the high-school and AAU data ingestion spanning ~139K players across 14 states.
- Built and validated a machine-learning model projecting high-school prospects into college roles (rotation to high-impact), reaching 0.82-0.83 ROC AUC across 1,059 prospects in the 2025-2027 recruiting classes.
- Developed a cross-league talent-valuation model unifying NCAA, international, and prep prospects onto one scale, anchored to 5,968 NBA player-seasons (2015-2026), that feeds the production tool.
- Built four-factor EPA regressions, offensive/defensive archetype classifiers, and OLS player power ratings over 2,461 Big Ten box scores and 1,131 Hudl Instat season files (314 leagues).
- Built an opponent-scouting and player-readiness platform (Next.js on Cloudflare) unifying game-prep, practice-load, player-tracking, and recovery data across 11 GB of sensor and film.

**AiCure**, Software Engineer Intern | May 2026 - August 2026 | Remote

- Built a Python pipeline that scans SEC EDGAR filings, news, and trial registries and produces a weekly automated digest and live dashboard; one run narrowed 300 filings to 43 relevant 10-Ks and 10 featured leads across ~10,700 tracked trials.
- Shipped a production HubSpot sync for ~10,700 clinical trials and 3,632 companies, with automated record-matching that correctly linked 84% (1,229/1,467) of previously unmatched contacts to their companies, backed by a full regression-test suite.
- Automated a weekly ops workbook (Airtable + Zendesk) and analyzed 133 trial contracts to answer a live product question, finding only 16% had confirmed ePRO usage and replacing manual spreadsheet work.

**Santa Clara University Formula SAE**, Mechanical Engineer & Welder | August 2024 - May 2026

- Machined chassis and structural components to tight tolerances on HAAS VF4 mills and a CL1 lathe, programming toolpaths in MasterCAM.
- Wrote modular lathe CAM programs for standard shaft parts, cutting setup and programming time on repeat jobs.
- Designed components in Onshape against FEA-driven requirements under strict budget and tooling constraints.
- Hand-welded 100+ hours on chassis tubing to meet structural and tolerance requirements, and helped scale the team from 12 to 100 members.

**Team 254 (FRC)**, Technical, Strategy & Manufacturing Director | August 2022 - May 2026

- Built a season-wide FRC scouting engine on The Blue Alliance API: a weighted least-squares power-rating solver with ridge regularization and robust noise handling, plus defender-detection to isolate each team's offensive contribution (FastAPI, SQLite, 84 tests).
- Directed a 100+ student team to a #1 world ranking (2023/2024) and a World Finalist finish (2024); managed a \$500K+ budget and 20+ concurrent projects.
- Trained 20+ students on CNC machining (VF4 mill, CL1 lathe, IS408 router) and MIG/TIG welding, and documented G-code and manufacturing training plans.

## ENGINEERING/SOFTWARE EXPERIENCE (CONTINUED)

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**IRISTEM (Introducing Robotics in Central America)**, Founder | August 2025 - May 2026

- Founded a FIRST partner nonprofit and launched the first FTC robotics team in Guatemala, independently building a bilingual (English/Spanish) design-and-fabrication curriculum.

**Robotics Mentor**, Mechanical & Design Mentor | August 2023 - May 2026

- Mentored middle-school teams to state qualifications and a world ranking of 42nd of 6,000+ teams, winning Connect, Motivate, and 2nd-place Inspire awards.

## PROJECTS

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- Self-directed football research project (Python): built statistical and machine-learning models across all 8 Ivy League programs over 20 seasons (2005-2024), quantifying how scheme and roster composition drive winning via unsupervised scheme detection, panel regressions with school/year fixed effects, and a random-forest win model. ([github.com/cgvhbjk/ivy-football-analytics](https://github.com/cgvhbjk/ivy-football-analytics))
- Rigorous, fail-closed backtesting framework for prediction markets (walk-forward folds, event-disjoint holdouts, deflated Sharpe, fee/slippage-aware replay); its promotion gate correctly rejected a Letterboxd-sentiment box-office strategy that showed no significant edge after costs.
- Fund-liquidity ranking model on SEC EDGAR Form D and ADV FOIA data (filtered from a 1.65M-row base), scoring 6,166 aging VC/PE funds on a two-axis model for secondary-market outreach.
- Full-stack rebuild of a Salesforce-style CRM (Prisma/Postgres, 216 unit, integration, and end-to-end tests), reconstructed from a detailed 27-page product spec.
- Built a relational database engine from scratch in Go, implementing its own storage, query, and transaction layers.
- Built a daily automation system that ingests multiple data sources, triages each item with an LLM, and routes results into an approval loop on a background scheduler.

## VOLUNTEER EXPERIENCE

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**UWBA**, IRS-Certified (VITA/TCE) Tax Preparer | October 2024 - April 2026

- Prepared 100+ tax returns for low-income families, conducting interviews and filings predominantly in Spanish.

## HONORS, AWARDS, & SKILLS

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**TFT Challenger Rank:** Ranked top 300 in North America (top 0.0008%); analyzed API data to optimize strategy, winning \$1,500 in prizes. MAA AIME Qualifier (Top 2.5%); USAMTS Honorable Mention (Top 10%).

**President's Volunteer Service Award (Gold):** Recipient x2 (top 1% nationally).

**Manufacturing & Design:** CNC machining (3-axis mill, lathe, router), MIG/TIG welding, MasterCAM, G-code, Onshape CAD, FEA.

**Programming & Software:** Python, MATLAB, Go, Java, SQL, FastAPI, Streamlit, React/TypeScript, Git.

**Data & Modeling:** scikit-learn, pandas, statistical modeling (regression, random forests, least-squares).

**Certifications:** Emergency Medical Technician (EMT), Specialist, Santa Clara University EMS (Jul 2026 - Jul 2028); CPR/First Aid; Haas Mill & Lathe operator certified.

**Languages:** Fluent English, Conversational Spanish.