JAMISON GO

Mechanical & Electrical Engineering
Cambridge, MA 02140

(407) 617-3968
Go.jamo@gmail.com

TECHNICAL SKILLS & AREAS OF EXPERTISE

Design & Project Management

- DFA, DFM & DFAM
- GD&T
- CAD and drafting (SolidWorks)
- PLM & PDM
- PCB Design (Altium, EAGLE)
- Risk, BOM, schedule management

Fabrication and Prototyping

- 2D & 3D subtractive fabrication
- Expertise in additive manufacturing techniques
- CAM
- Arduino, mbed
- Electrical wiring and routing

Modeling and Simulation

- SolidWorks (static, thermal, fluids, modal, fatigue)
- COMSOL
- Multisim
- MATLAB and Simulink

- US Citizen, Top secret security clearance (2009 - 2012)
- SolidWorks Certified Professional (CSWP) – Certified professional in use of SolidWorks.
- Writing and processing of intellectual property documents.

PROFESSIONAL EXPERIENCE

Desktop Metal (2017 - 2023)

Senior Mechanical Engineer

- Advanced 15+ 3D printing subsystems/machines from conceptual designs to final products. Cross-disciplinary coordination with process, electrical, controls, and product teams.
- Performed structural analysis on frame and cantilevered carriage systems for industrial high-throughput binderjet printers. Targeted single-micron repeatability at specific points accounting for variable payload conditions and machine configurations at high speeds.
- Developed in-situ powder bed conditioning system using dry vapor deposition. Developed slim graphite-epoxy diffuser nozzle for 99% homogeneity across powderbed. Utilized syntactic foam clamshell casing to protect adjacent temperature-sensitive process modules.
- Devised high-purity lid for build boxes during cross-linking process. Required high fidelity sealing at 100+ C, low velocity tangential inert sweep gas to evacuate vapors, high-sensitivity pressure relief, and mechanical design including torque specs and component tolerances with thermal dynamics considerations.
- Designed clamp and lift mechanism for 50+ kg SiC dome in furnace. Developed process and tooling for initial alignment, reliable clamp detection and clamp pressure control, and failsafe modes to keep users and the product safe.
- Created granular metering system using dilute phase vacuum conveyance. Applied analytical models to assist in component down selection. Designed custom low-profile vacuum-rated hoppers to satisfy stringent height requirements.
- Reviewed and imported products from company acquisitions. Import into company PDM and redraft to standards. Evaluate missing requirements and capture them in updated documentation. Implement cost-saving measures for critical safety and performance fixes.

R&D Hardware Engineer

- Validated process concepts and parameters via custom designed and fabricated scale test platforms.
- Optimized project spending and timeline through analysis to determine feasibility prior to prototype procurement.
- Generated eight patents for automated depowdering technologies by spearheading company-wide brainstorm sessions that generated 108 unique concepts.
- Led a team of engineers to devise, prototype, and test concepts related to the full automation or technician-assisted recovery of parts from powder-bed print beds.
- Coordinated design, fabrication, and assembly of first generation automated depowder units with adjacent engineering teams to deliver a fully functioning and aesthetically complete unit in 7 months.
- Studied metal powder spreading kinetics for high powderbed density and minimal defect generation

MIT Mechanosynthesis Laboratory – *Research Assistant* (2013 - 2017)

- Investigated high throughput, high-resolution, extrusion-based additive manufacturing of polymers and nanocomposite resins at the millimeter and meter length scale.

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- Invented technique for extrusion-based printing ~10x faster than current technology at micron resolution.
- Managed the budget and research timeline for multiple $100K+ projects simultaneously.
- Simulated characteristics of molten polymer through an extrusion chamber to verify analytical models and design choices.
- Designed optical assemblies for high-powered lasers (class IV diode) operating under high-pressure and high-temperature conditions.
- Developed a novel coaxial thread rolling extruder to increase resolution and maximize extrusion force while minimizing size and mass.
- Filed two patents, published three papers, and gave two conference presentations.
- Supervised and mentored three undergraduates in complementary research projects over 3 semesters.

INDEPENDENT ACTIVITIES & ENTREPRENEURSHIP

BattleBots– *Team Captain/Manager and Design Engineer of Team "SawBlaze"* **(2016 - Present)**

- Reigning world champion of the Discovery TV series "BattleBots" from a field of 50 teams from across the world.
- Demonstrated continual improvement from rookie to tournament placement top 16, top 8, top 8, top 4, and world champion.
- Managed 10 person cross-country multidisciplinary team of 10 people with diverse skills and life commitments
- Developed the "hammer saw" weapon: a comparatively thin blade designed to puncture and slice opponents' top armor. This innovates over traditional saw blades, which are based on continuous torque and too fragile for combat.
- Established and executed project timelines amidst uncertain schedules: from scope of work, design, prototyping and testing, production, assembly, and testing to verification. 100% success rate for delivering on critical dates.
- Negotiated sponsorship contracts with companies to raise nearly $40k in 4 weeks, annually.
- Generated engineering drawings including GD&T. Established team PDM procedures and BOM tracking.
- Coordinated vendor management for custom fabricated and COTS parts from domestic and international sources.
- Performed hundreds of interviews with producers, news outlets, and live audiences.

Combat Robotics - *Independent competitor in international-level events* **(2004 - Present)**

- Current #1 ranking for each weight class (3, 12, and 30 lbs). Multiple championship wins totaling $39k in prize money
- Designed a novel non-wheeled locomotion to utilize a weight bonus as per the ruleset. Resulted in widespread adoption of the mechanism by competitors and subsequently an adjustment in rulesets worldwide.
- Published build reports and documentation detailing design intent, implementation, and outcome including failure analysis.

Developing Local Maker Communities

- **MIT MakerWorkshop (MW)** – *Founding Committee & Lab Instructor*
- **Georgia Tech Invention Studio (GTIS)** – *Founding Member and Lab Instructor*

Entrepreneurship

- **Go Innovate LLC** – *Owner, Engineering Consulting Company*
- **MIT 100K Competition/3Delicious** – *Co-founder and Engineering Lead*
- **Inventure Prize: Georgia Tech** – "*Velociryder" Mechanical Design Lead*

EDUCATION

Massachusetts Institute of Technology – *Cambridge, MA*

- 4.8/5.0 GPA
- Master's Mechanical Engineering (2015)

Georgia Institute of Technology – *Atlanta, GA*

- 3.59/4.0 Cumulative GPA
- Bachelor's Mechanical Engineering (2013)
- Bachelor's Electrical Engineering (2013)