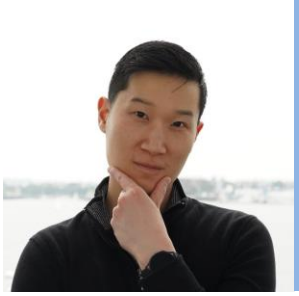

JAMISON GO

Rapid Prototyping | Mechanical Design | Robotics & Mechatronics

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(407) 617-3968

TECHNICAL SKILLS & AREAS OF EXPERTISE

Design & Project Management

- DFA, DFM & DFAM
- GD&T (ASME Y14.5)
- CAD and drafting (SolidWorks, CATIA)
- PLM, PDM, ECO process
- PCB Design (Altium, EAGLE)
- Risk & schedule management
- Task tracking (JIRA)
- BOM management

Fabrication and Prototyping

- 2D & 3D subtractive fabrication
- Additive manufacturing technologies
- Sheet metal and hardware
- Welding (MIG, TIG, Stick)
- CAM & CNC
- Arduino, mbed
- Electrical component assembly and harnessing

Data Processing & Simulation

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

- SolidWorks Certified Professional (CSWP), CSWPA – Sheet Metal.

PROFESSIONAL EXPERIENCE

RISE Robotics - *Senior Mechanical Engineer* **(2024 - Present)**

- Managed technical direction as systems lead and mechanical resource for RISE product evaluation kit. Coordinated with teams to demonstrate record-breaking cylinder performance amidst an aggressive timeline whist introducing user-centric design elements. Redesigned components for cost effective manufacturing at scale.
- Developed novel concept for undertension detection of belt with considerations for reliability, cost, and ability to rework existing components. Mitigated technical risk with quick-turn functional subsystem prototypes and validation testing.
- Developed latch mechanism to support underactuated RailTrac liftgate product. Reduced subsystem cost by 75% transitioning to sheet metal while increasing field reliability and satisfying critical requirements including accommodating large manufacturing variation between liftgate models.
- Designed purely mechanical solution to belt storage and tension management subsystem for 22 tonne load class cylinder. Reduced scope and cost by 80%. Modeled components and performed calculations, created drawings and assembly documentation, managed the build, and carried out validation tests in less than 3 months.
- Appointed lead engineer for an experimental actuator architecture. Responsible for mechanical design and management of project including review of test plans, schedule, results, and scoping work for junior engineers. Evaluated performance metrics via python and used data to predict the onset and cause of failure.

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-profile graphite-epoxy diffuser nozzle for 99% vapor velocity homogeneity across width. Designed syntactic foam composite clamshell casing to protect adjacent temperature-sensitive process modules.
- Devised lid for maintaining a high-purity environment between 25 to 140 C and uniform low-velocity tangential sweep gas during cross-linking process. Exercised flow simulation and thermal-mechanical design including material selection, thermal fatigue, torque specs and component tolerances with thermal dynamics considerations.

- Designed clamp and lift mechanism for 50+ kg SiC dome in furnace. Developed tooling and SOP for initial alignment, reliable clamp detection and clamp pressure control, and failsafe modes to keep users and the product safe.
- Created sand metering system using dilute phase vacuum conveyance. Coordinated with vendors for source-controlled custom modules to satisfy stringent requirements including multi-stream metering and microliter dosing of fluids.
- Reviewed company acquisitions and import into PDM with required tolerance. Perform DFMEA and capture missing requirements 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)

- Invented and patented technique for FFF printing ~10x faster than current technology at micron resolution. Included development of a novel coaxial thread rolling extruder and gantry-mounted optical assembly for class IV diode laser.
- Managed the budget and research timeline for multiple $100K+ projects simultaneously.
- Simulated characteristics of molten polymer through an extrusion chamber using to verify analytical models.
- Supervised and mentored three undergraduates in complementary research projects over 3 semesters.

INDEPENDENT ACTIVITIES

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

- Demonstrated continual improvement from rookie to top 16, top 8, top 8, top 4, and world champion across 6 years.
- Managed multidisciplinary team of 10 people, cross-country, with diverse skills and life commitments
- Developed the "hammer saw" weapon: an innovation which combines geometry optimization, choice materials, and flywheel/spindle design to develop cutting blades specific to the rigors of 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*

- Multi-time champion with wins totaling $40k 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, event reports, and design 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*

EDUCATION

- Massachusetts Institute of Technology – MSME *Cambridge, MA*
- Georgia Institute of Technology – BSEE, BSME *Atlanta, GA*