

Brendon Stearns

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I am an engineer, skier, mountain biker, designer, builder, breaker, and fixer with expertise in machine learning and mechanical design. I have excellent communication skills and exceptional attention to detail. I have spent the last 2 years developing my skills as a software engineer, specializing in machine learning and taking classes in computer vision and robotics. In my prior professional experience as a mechanical engineer in the vet-tech industry, I gained priceless hands-on, real product experience in a fast-paced technical environment that differentiates me from others. I have proven professional experience of product development and broad knowledge that can be applied across industries. I am a creative problem solver, and I bring grit and perseverance as an elite level athlete. I excel working independently, enjoy collaborating, and I am eager to learn from and share my knowledge with others.

EDUCATION

Georgia Institute of Technology, Atlanta, GA

December 2024

Master of Science in Computer Science, Specialization in Machine Learning

Coursework: Machine Learning, Computer Vision, Natural Language Processing, Artificial Intelligence Techniques for Robotics, Cyber Physical Design and Analysis, Video Game Design, Human Computer Interaction

Northeastern University, Boston, MA

December 2020

Bachelor of Science in Mechanical Engineering, Minor in Biomechanical Engineering

Private Pilot Part 61 Training

Ongoing

TECHNICAL SKILLS

- | | | |
|----------|----------------------------|------------------------|
| • Python | • MATLAB | • Biomedical Implant |
| • C#/C++ | • SolidWorks | Design |
| • Java | • 3D Printing | • Wet Lab Experience |
| • Unity | • Rapid 3D Prototyping | • GD&T Drawings |
| • Git | • Basic Machine Shop Tools | • Bike/Ski Maintenance |

PROFESSIONAL EXPERIENCE

Movora: Development Engineer for the Research and Development Team – Ketchum, ID

April 2021-Nov 2022

- Redesigned the biologically fixed hip implant products to improve neck strength and scale-ability by increasing the radius without sacrificing range of motion and by making the radius a function of neck length.
- Simplified the Hip CAD model by 10+ features by restructuring the feature tree and removing unnecessary steps.
- Rapid prototyping of a unipolar hip with a custom small-scale retaining ring using SolidWorks and a 3d Printer.
- Expanded the hip product line by creating a 16 and 19mm head that allows for integration between our system and our sister company's system. The new models are driven by equation-based dimensions and a scaling feature that allow for future sizes to be created in half the time.
- Prototyped vacuum form packaging to reduce waste while increasing product accessibility during surgery by 3d printing molds to use with a desktop vacuum former.
- Responsible for updating the TPLO Plate design of our new sister company to introduce more modern features by reshaping the plates and changing the screw angles.
- Collaborated with surgeons to model and produce multi-sized fracture fixation plates by using equations to adjust both the length of plate and number of holes.

Portal Instruments: M.E. Co-op for the Cartridge Team – Cambridge, MA

January-July 2020

- Designed and fabricated a device holder for shock and vibration testing to test 8 devices at once. This eliminated the scratching problem and made the process more efficient.
- Prototyped a cartridge filler to eliminate splashing. The device uses springs and an air cylinder to move the needle height at an adjustable rate. It also allows for the changing of needles and tubing when necessary.
- Designed a glue fixture, increase the process from 1 to 8 devices at a time while increasing the consistency.
- Created an endmill program and designed a fixture for accurately and safely slot cutting devices.
- Aided with cartridge validation testing which included filling, stoppering, and ejecting cartridges.

Ballard Unmanned Systems: M.E. Co-op for the Advanced Engineering Team – Southborough, MA January-July 2019

- Developed a “Bread Board” version of the H₂ Fuel Cell using SolidWorks. This system is a plug and play environment allowing the team to change components within seconds to test and take measurements.
- Redesigning the coolant reservoir, cutting production time by 40 minutes, reduce cost, and maintain similar weight.
- Performed acceptance and diagnostic tests on systems to prep them for shipment or to find and fix problems.
- Standardized part shape and dimensions for coolant tubes by creating fixtures in SolidWorks. The fixture also eliminated the need for an engineer to build the parts or to give detailed training.

Stoneridge Control Devices: M.E. Co-op for the Advanced Engineering Team – Canton, MA

January-July 2018

- Evaluated motors and other products with the use of x-rays, hand tools, and cuts made in the machine shop. Each item was analyzed, deconstructed, and documented. Key findings were reported in presentations to management.
- Developed a fixture to enable dyno testing in a thermal chamber. The fixture modified the dyno so it would have adjustable height and location, allowing it to remain outside the chamber while connecting to a motor inside.
- Designed and executed a test to compare different kinds of glues and their relative strengths. Made fixtures in Pro-E to create consistent glue patterns and conducted the tests using an Instron.

PROJECTS

Sheep Quest (Academic Project)

Summer 2024

- Worked in a team of 5 to design, develop, and produce a video game about herding sheep.
- Developed three variations of a state-machine AI wolf to patrol, interact with the player, and attack the sheep.
- Created in game menus and debugged various scripts and game objects.
- Presented an alpha version as well as the final to our TA with a gameplay video and game trailer.

Motion History Images for Activity Classification (Academic Project)

April 2023

- Developed code in Python using OpenCV and Scikit-Learn to process videos and identify human movements.
- Trained a KNN algorithm to identify waving, clapping, walking, jogging, running, and boxing with HU Moments.
- Obtained a 71.5% test result accuracy and a 94.8% training accuracy per video.

SLAM Implementation for 2D Drone Route Planning (Academic Project)

December 2023

- Implemented a simultaneous location and mapping algorithm in Python to navigate obstacles in XY Space.
- Autonomously directed a simulated drone with noisy sensors to avoid trees and reach a goal with time constraints.

Capstone of Engineering: NU Baja 2WD to 4WD Conversion (Academic Project)

July-December 2020

- Worked on a team of 5 to design, build, and test the necessary components to convert a 2WD BAJA car to 4WD.
- Presented the design process and the final car build to the class of 100+ students and advisors.

LEADERSHIP EXPERIENCE

Northeastern Alpine Ski Team

2016-2020

Men's Team President 2020, responsible for creating dryland training opportunities, a pre-season training camp, managing team gear, and maintaining communication with Northeastern Club Sports and Thompson Division Executives.

Eagle Scout, Bethel, ME

2003-2015