# STERLING GRAY

## Mechanical Engineer

## CONTACT

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## CERTIFICATIONS

**Certified Solidworks Professional**
*February 2018*

**Certified Solidworks Associate**
*December 2017*

## TECHNICAL SKILLS

**Applications**
SolidWorks, AutoCAD, MATLAB, Simulink, LabView, Adobe Illustrator, Adobe Photoshop, JIRA, Confluence, Microsoft Office Suite

**Electronics**
AutoDesk EAGLE, KiCAD, SolidWorks Electrical, Soldering, Cable Design

**Programming**
Java, C++, STMicroelectronics, Arduino, Python, HTML, CSS, GIT

**Machining**
Carpentry, Milling, Lathing, CNC Machining, Laser Cutting, 3D Printing (FDM, SLA, SLS), Molding and Casting, Power Tools

## WORK EXPERIENCE

**Mechanical Engineer | AppHarvest**               *April 2021 - Present*
- Designed, manufactured, and tested 8 tomato harvesting robots over 4 generations of design increasing harvesting speed over 400%
- Lead designer responsible for collaborating with machine learning team to optimize optomechanical design of next generation vision systems including fixturing lenses, filters, and fields of view for 3 camera subsystems
- Performed vibration analysis using SolidWorks Simulation to design components that reduced movement of robot when operating on a soft surface
- Diagnosed and repaired software bugs while implementing new features on robots deployed in the field
- Created and programmed 2 electro-mechanical test assets to evaluate effectiveness of R&D subsystems
- Worked within the AGILE methodology to adapt to requirement and scope changes while self-managing workload
- Integrated SolidWorks Electrical into new workflow for multi-disciplined team
- Translated product requirements into detailed technical requirements using FMEA
- Generated intellectual property collateral for 2 complete patent applications

**Robotics Engineer | Root Ai**               *July 2019 - April 2021*
- Streamlined injection molding process of robotic gripper components through material selection, test fixtures, and DOE to reduce prototyping time ultimately facilitating faster iteration on new and existing designs
- Designed a 400-gallon, 16 ft hydroponics farm for 96 tomato plants with automated lighting and nutrient control
- Learned ECAD independently and proceeded to design 2 PCBs for robotic subsystems and central real-time controller
- Collaboratively designed secondary camera z-axis to increase throughput by 300%
- Negotiated prices and timeframes with multiple external vendors to deliver specified designs at cost and scale
- Learned GD&T (Y14.5) to ensure manufacturing tolerances and communicate design intent on over 50 parts

**Test Engineering Intern | Manta Product Development**       *July 2018 - September 2018*
- Created test plans designed to verify product requirements and meet company standards for 7 products
- Designed and machine test fixtures to produce repeatable experiments on 350 manufacturing samples
- Improved design iterations with test data and assisted design engineers in SolidWorks modeling
- Analyzed testing results, and wrote internal reports on findings and presented recommendations to clients

**Lab Manager Co-op | DASSAULT SYSTÈMES**       *January 2018 - June 2018*
- Designed and built self-led projects to complete performance checks in SolidWorks, SolidWorksCAM, SolidWorksPCB
- Taught 40+ faculty skills on multiple manufacturing techniques including, CNC, 3D Printing, Molding and Casting
- Managed lab space and performed weekly maintenance on 30 machines
- Engaged with over 100 customers on technology capabilities and software portfolio

**Research Assistant | Northeastern University**       *October 2017 - June 2019*
- Led research project designing and implementing a novel origami actuator for quadcopter/car hybrid
- Assisted professor and PHD students in multiple research topics including, soft robotics, self-folding robotics, and durable robotics
- Manufactured 8 iterations of test fixtures and 100 test samples using a laser engraver

## EDUCATION

**Northeastern University,** Boston, MA
M.S. in Mechanical Engineering, Mechatronics Concentration - *Summa Cum Laude* 2021
B.S. in Mechanical Engineering - *Magna Cum Laude*                2020
**Honors:** Dean's List, University Honors Program, Dean's Scholarship