(503) 880 5659
nnfuller@gmail.com
6122 SE Lexington
Portland, Oregon 97206
@nathannfuller

EDUCATION

B.S. in Mechanical Engineering, *Oregon State University*
(3.4 GPA) **2013-2017**

IB Diploma, *Cleveland High School*
(3.8 GPA) **2008-2012**

REFERENCES

(available upon request)

SKILLS

Project Management
Product Management
Mechanical Design
Design for Manufacture
Electronics Prototyping
PLC Controls
Industrial Robotics Programming
3D Printing
Manual Machining
MIG Welding
CNC Operation
Web Development
Public Speaking
Team Building

NATHAN NYOLE BUTLER

Entrepreneurial engineer, with 6+ years leadership experience.

PROFESSIONAL EXPERIENCE

Lead R&D Engineer - Robotics **Aug 2022 -Apr 2024**
Sonny's Enterprises Inc. ***Remote* - Tamarac, FL**

Developed edge computer vision solution for preventing collisions in carwash tunnels. Was responsible for full-stack architecture and implementation, ML-Ops, as well as backend for remote configuration and distribution of models to the edge. Technologies used included : Nvidia DeepStream, gstreamer, FastAPI, Azure Blob Storage, and Docker. Deployed to 20+ locations in the field with over the air updates and configuration.

Robotics Engineer/Product Manager **Mar 2019 -Aug 2022**
Plover Inc. **Portland, OR**

Lead a team of 6 to design and bring a new car wash solution to market using cutting edge 3D scanning and 5 axis Beckhoff PLC controls. Developed technology roadmap for the product line and delivered features on schedule. Developed and maintained software package responsible for +7000 cars washed, while working on SQL logging and OpenCV based features.

Equipment Design/Controls Engineer **Sept 2018-Mar 2019**
Siltronic Inc. **Portland, OR**

Oversaw maintenance and improvement of the polishing section of a 24/7 silicon wafer production line. Designed a new chemical dosing skid to eliminate breakdowns and improve environmental compliance resulting in a 2x increase in uptime. Served as controls lead for the facility while the site manager was on leave.

CEO, Co-Founder **Jan 2015-July 2018**
Form Forge LLC **Portland, OR**

Managed a four member team. Designed and maintained CAD product models and reviewed engineering drawings. Installed four custom six axis robotics systems (Fanuc,Comau, ABB). Successfully estimated project costs and managed budget for contract work. Designed electrical systems and configured PLCs for multiple key projects. Delivered over 100 presentations on team progress, and company vision.

Large Format Additive (Independent Contractor) **July 2016 - November 2016**
Autodesk Inc. **San Francisco, CA**

Commissioned and operated a screw based extruder on a Fanuc robotic arm. Wrote a custom g-code interpreter for Fanuc robotic arm. Printed test components to verify material processing.

Additive Manufacturing Researcher (Intern) **June 2014 - September 2014**
Autodesk Inc. **San Francisco, CA**

Developed unique method for bonding carbon fiber reinforced polymers to parts manufactured using Objet style 3D printers, featured in Forbes magazine. Built programmable curing oven for composite parts with PC interface.

Technical Marketing (Intern) **Summer 2010, 2011, 2013, & 2015**
Autodesk Inc. **Portland, OR**

Managed a team of 6 interns to create tutorial content that was accessible and relevant to other high school students. Studied impacts of additive manufacturing on the traditional supply chain for an Xbox controller. Lead on-campus workshops to promote the use of CAD tools with a focus on Fusion 360.

AWARDS

NASA 3D Printed Habitat Centennial Challenge
2nd Place 2017

VentureWell E-Team Grant
$25K 2016

Civil War Shark Tank
1st Place 2016

FIRST Robotics
Innovation In Control 2012
by Rockwell Automation 2011
2010

Excellence in Design 2011
by Autodesk

First Lego League World Champion 2007

APPLICATIONS

Inventor - *Advanced*
TwinCAT3
AutoCAD
Solidworks
NX
Creo
Fusion 360 - *Advanced*
Fusion 360 CAM
Fusion 360 FEA
Rhino
Google Docs
Excel
Git
Confluence
Jira
Asana

PROGRAMMING LANGUAGES

IEC 61131-3 (Ladder, Structured Text preferred)
Python
Processing
Matlab
C#
C++

RECENT VOLUNTEER WORK

First Lego League Regional Judge
3rd Grade Engineering Presenter

KEY PROJECTS

5 Axis Autonomous Car Wash (2019-2022)

Lead a team of 6 to design and bring a new car wash solution to market using half the water and chemical of competitors by leveraging a custom 5 axis motion platform, dual LiDAR scanners and a custom pumpstand. Car wash was installed and tested in multiple locations, washing over 300 cars. This was the first car wash in the world to implement 3D scanning, predictive maintenance, and custom toolpathing for each vehicle.

Alpha(https://www.youtube.com/watch?v=suL1_jP9ffg) Beta (https://www.youtube.com/watch?v=_4atKaMRvzo)

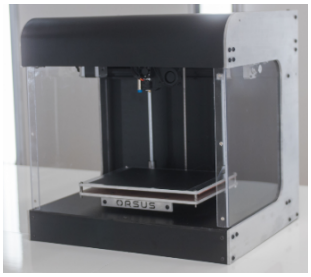
Thermoplastic Extruder for Large Format 3D Printing (2017-2018)

Started as a Senior Capstone at Oregon State University, this project was funded through a $25K Venturewell E-Team grant I wrote my junior year. Taking this project from concept through production required extensive use of CAD, FEA simulation, as well as a self taught knowledge of polymer extrusion. The result was an industrial tool that offered best in class control and performance, all with less than half the manufacturing cost of the nearest competing product. This project was one of multiple undertaken while I was the CEO at Form Forge LLC.
(https://www.youtube.com/watch?v=F3_1M8BJG3g)

Waterless Concrete Printer for NASA Centennial Challenge (2017)

For Phase 2 of the NASA Mars 3D Printed Habitat Centennial challenge, I led a team of four that developed a 3D printer able to print in a combination of HDPE (milk jug) plastic and Silica sand. On a shoestring budget our team was able to secure second place and $70K in prize money. This would become the foundation on which I founded Form Forge LLC. The final beam was twice as strong as concrete, and used 70% indigenous material to reduce the need to bring materials from earth.

(https://www.nasa.gov/directorates/spacetech/centennial_challenges/3DPHab/6-teams-earn-prize-money-in-second-level-of-challenge)



World First Hybrid Desktop Manufacturing Tool (2014-15)

While working as an undergraduate, I developed the first desktop printer able to automatically switch between a 3D printing or “additive” head and a cutting or” subtractive” tool. This combination of technologies combined the ease of 3D printing with the precision of CNC machined parts. This project required an emphasis in design for manufacturing, focusing on the use of off the shelf parts and open source hardware to be able to deliver a product from a garage workbench.

(https://www.youtube.com/watch?v=ZyeInf7xC9Y)

Micro Textures for Composite Adhesion (2014)

While working with Autodesk and Lightning Motorcycles to develop strategies for additive manufacturing composite core structures, I developed a method for creating a mechanical bond between the incompatible resin chemistries of the UV cure resins used by polyjet 3D printers and the thermoset resins traditionally used in composites. The results were written up in Forbes Magazine.

(https://www.forbes.com/sites/bruceupbin/2014/09/10/the-future-of-manufacturing-as-told-in-four-objects/#32dfe94070b2