**Thaddeus Hughes**

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# PROFILE

I’m a mechanical engineer with strong programming and fabrication background. I’ve worked with a plethora of different technologies and teams ranging from farmers to pharmaceuticals. I bring a unique perspective and skillset to produce creative or cross-pollinated solutions to tough problems and leave behind repairable and extensible solutions.

# EXPERIENCE

**Mechanical Design Engineer Nashua, NH** DAPR Engineering Aug ‘22–Dec ‘22

* Analyzed conceptual designs of composite fabrication equipment for feasibility
* Designed, pitched, and developed alternative concept paths that better met time, resource, and budget limits
* Made physical mocks and prototypes to prove out concept viability and potential drawbacks with minimal expense

**Mechanical Design Engineer Manchester, NH** DEKA Research and Development Jun ‘19–Aug ‘22

* Led the development of IV Solution module while collaborating in a team of 7 to deliver functional prototypes
* Delivered minimum viable product to client in full 25% ahead of schedule
* Developed test fixtures with electronic components ranging from simple data logging to real-time motion profiling
* Utilized CAD, FEA, & Rapid Prototyping to develop prototypes demonstrating product function

**Mechanical Engineering Intern Augusta, GA** Textron Specialized Vehicles Jun ‘18 – Aug ‘18

* Delivered $1 million annual savings by redesigning golf car assemblies to enable efficient packaging and shipping
* Eliminated a quality gap by working with technicians on the floor to develop and implement a calibration procedure

**Technical Lead Terre Haute, IN** Formula SAE May ‘17 – May ‘19

* Developed two formula racecars from conception to finished prototype, 1-year development cycles
* Managed 25 direct reports across powertrain, chassis, aerodynamics, electrical, and suspension subteams
* Developed vehicle dynamics package from scratch to identify and maximize key performance characteristics
* Led subsystems specializing in mechatronics, structural design, and design for manufacturability

**Simulation Engineering Intern Peoria, IL** Caterpillar Jun ‘17 – Aug ‘17

* Developed software analysis tool that accounted for combustion anomalies to help design more robust engines
* Saved approximately $50,000 per engine tested by reducing testing necessity by 50%

**Mechanical Engineering Intern Germantown, MD** Hughes Network Systems Jun ‘16 – Aug ‘16

* Executing existing test procedures and providing recommendations for improvements
* Designed 5 test fixtures for radio frequency performance and leak testing, leading to production line improvements

**Farm Hand, IT Support, Etc. Shirley, IL** Progressive Prairie (Family farm growing 2500 acres of Corn & Soybeans) 2008 – 2015

**EDUCATION - Rose-Hulman Institute of Technology Terre Haute, IN**

# B.S. Mechanical Engineering – GPA: 3.8/4 May 2019

# Minors - Electrical Engineering, Computer Science, Computational Science

# TECHNICAL SKILLS

**CAD**: SolidWorks (6 years), NX (1 year), Creo Parametric / Pro-E (1 year), OnShape (2 years), Fusion 360 (1 year)

**Programming:** 8+ years experiencein C/C++, C#, Java, JavaScript, PHP, Python, 4 years MATLAB

**Simulation:** FEA - ANSYS (4 years), SolidWorks (5 years), MecWay (1 year), TVA, self-written simulations

**Analysis:** Statics, Fatigue, Mechanical/Electrical Systems, Vehicle Dynamics, 3D Dynamics, GD&T

**Fabrication:** Mill, Lathe, Shear, Brake, Welding (MIG/TIG), CNC/CAM (HSMWorks, Fusion360, self-written gcode)

**Business:** Team and Project Management (8 years), Timeline Development, Cost Estimation

# **REFERENCES** *(contact information, and more, available upon request)*

Fraser Tibbets – Engineering Manager at DAPR Engineering

Chris Langenfeld – Chief Engineer of Advanced R&D at DEKA R&D