

# LOUISE MCGOWIN

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## Summary

Triple-degreed engineer spanning both the hardware and software spaces. Passion for product development, with an affinity for design and R&D/analysis. Extremely driven professional who has worked with partners around the globe, bridging cultural and language gaps.

## Skills

### Engineering:

- SolidWorks (Simulation, Sheet Metal, Piping, Surfacing)
- Creo Elements/Direct
- Ansys Simulation (Mechanical, Maxwell)
- Basic machining
- Injection molding
- Rapid prototyping (3D printing, laser cutting, sheet metal, etc.)
- MIG welding
- Electronics-specific plastics design (PCB chassis/housings)
- Design of Experiments (DOE)
- DFM/DFA analyses
- FMEA analyses
- Tolerance stackup analyses
- International partnerships/manufacturing
- SAP ERP software
- SolidWorks PDM Admin

### Programming/Other:

- MATLAB
- Python
- Tomcat
- Java EE
- SQL (Oracle)
- Linux

## Professional Experience

### Senior Mechanical Design Engineer—Brady Corp—Salt Lake City, UT

Dec. 2023—present

- Lead mechanical engineer on 3X new barcode scanner/charger projects, including some end-to-end design with multi-part ownership
- Oversaw customer-manufacturer relationship, including informal supplier audits and onsite tooling fabrication, T0 part analysis, and inspection lab evaluation
- Solidworks PDM Administration team member, involving a ground-up workflow creation, data card creation, and overall process improvement
- Team representative for simulation-related activities, including internal analysis as well as third-party relationships
- 2D and 3D design, with careful insight and forethought into design parameters and manufacturing limitations

### R&D Engineer III—Varex Imaging—Salt Lake City, UT

Sept. 2022—Dec. 2023

- Develop new CT scanner x-ray tubes and subsystems, with stringent design requirements for all parts (rotation up to 50G, vacuum pressure, temps up to 1000 °C)
- Lead mechanical engineer for a new multi-PCBA assembly, complete with a plastic enclosure and hermetic seal
- Lead mechanical engineer on a novel tamper-proof system for CT tubes [patent-pending]
- Designed multiple molded Viton press-in-place gaskets, acting as hermetic seals between large cast parts with loose tolerancing
- Performed Ansys FEA simulation to ensure structural integrity of parts under load

- Designing and deploying an SQL database of x-ray tube parameters to be shared across the company and act as the real-time data layer for ~10 in-house applications
- Lead engineer/project manager for a platform variant of a current x-ray product

#### **Product Design Engineer—Traeger Pellet Grills—Salt Lake City, UT**

Jan. 2020—July 2022

- Owner and lead mechanical engineer of control panel and other associated electronics in 2022 Timberline XL grill (<https://www.traeger.com/pellet-grills/timberline-xl>)
- Designed plastics (~40 parts) under strict temperature, water ingress, flammability, and serviceability requirements
- Ensured manufacturability by performing DFM/DFA with fabrication partners
- Completed 2D drawings, including (occasional) GD&T and surface finish/texture callouts
- Implemented quality-centric activities such as FMEA, DOE, test design, and test execution for various grill parts; also managed associated ECNs
- Managed cost activities and comparisons, including per-unit, NRE, and tooling cost categories
- Head of social activities for Product Dept. (40 people), managing budget of \$15K/quarter
- PDM Administrator for Product Dept.

#### **Mechanical Engineer—Dyno Nobel—Salt Lake City, UT**

July 2018—Dec. 2019

\*18-month fixed-term

- Co-designed advanced piping system for a \$3M modular explosives plant with Senior Engineer (using SolidWorks Routing module; 2,000-part assembly)
- Designed a \$50K hopper/auger structure, along with platforms, walkways, and safety railings suspended between 40-foot ISO containers
- Performed FEA on hopper/auger structure, using software and hand calculations
- Reduced lead time and manufacturing costs by \$10K by standardizing CAD components
- Redlined and updated P&IDs for 9 subsystems within explosives plants
- Completed technical safety audits to protect process and health/well-being of employees

#### **Mechanical Engineer (Intern to Full Time)—Hewlett-Packard—Boise, ID**

Jan. 2016—July 2018

- Test lead overseeing firmware/hardware engineers supporting the life-test environment
- Regularly worked with partners in China and Japan to co-develop LaserJet printers
- Lowered warranty costs by developing mechanism using photosensors and servo actuators to induce engine paper jams, evaluating system response

#### **Software Engineer—Hewlett-Packard—Boise, ID**

June 2013—Dec. 2015

- Developed/maintained enterprise system to monitor printer toner/ink levels using Java EE with Oracle database and various model-view-controller frameworks
- Restructured and split off a legacy application to process ink/toner levels for a billion-dollar business, reducing risk for future releases; developed new test setup using H2 in-memory database and Junit framework
- Installed and maintained Tomcat servers on Windows and Linux to monitor and debug the applications and allow use of web services

## **Education & Certifications**

#### **Purdue University—West Lafayette, IN**

May 2023

Master of Science (MS), Mechanical Engineering

#### **Boise State University—Boise, ID**

May 2018

Bachelor of Science (BS), Mechanical Engineering

3.87 | \*ISPE Student of the Year, Mechanical Engineering Scholar, Tau Beta Pi

#### **The University of North Carolina at Chapel Hill—Chapel Hill, NC**

May 2013

Bachelor of Science (BS), Information Science

## Leadership & Involvement

**President, VP, Member at Large, Social Chair—HP Young Employee Network—Boise, ID**

Oct. 2013—July 2018

- Managed 250-member employee resource group; maintained \$5K budget
- Organized 50+ club events per year, engaging over 3000 employees

## Interests/Personality

**Interests**—Snowboarding, Pretty Lights, backpacking, puzzles, The Legend of Zelda, Star Wars, TV/cinema analysis, NFL

**Personality**—ENTP (Meyers-Briggs), Enneagram Type 7, ambitious, adventure-seeking, logic-driven, extroverted