Aaron Ziegler

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EDUCATION

Johns Hopkins University - May 2025 **GPA:** 3.62
Bachelor of Sciences, Mechanical Engineering

EXPERIENCE

Suspension Lead, Designer – Blue Jay Racing BAJA SAE *2021-present*

- Led a team of 5 to develop an efficient suspension system with 25% weight reduction by converting the steering knuckle from welded steel to CNC aluminum, improved accuracy of assembly level FEAs by applying Neuber stress corrections, and new suspension geometry that reduced loading on linkages (2023)
- Designed linkages for front and rear suspension, utilizing SolidWorks PDM to automatically update design as other components changed and ANSYS FEA to optimize the designs (2023)
- Created new jigging method to weld suspension using a jig plate with rod ends to set the geometry, implemented use of shaft collars to better constrain tubes, added mock parts to ensure clearance were met, and reduced set up time, completing all linkages within 3 weeks, previously 6 weeks (2022)
- Designed the front steering knuckle to fit tight packaging limitations, integrate with connecting components pass expected loading conditions, and reduce component weight by 20% (2021)

Beauty Manufacturing Platform Engineering– Proctor and Gamble *Summer 2023*

- Tested and redesigned a new capping chuck in SolidWorks to integrate multiple chucks into one and eliminate need to manually switch chucks during product changeover, improving line efficiency by 15%
- Designed and tested new automated scroll swap in SolidWorks to integrate with current production line, improving changeover time by 90%
- Directed development of simulation model to optimize on-line bottle behavior for zero picking failures
- Developed a BVOA in Excel for plants worldwide on the most cost-effective solution towards automation of capper chuck changes

Beauty Technology & Innovation Engineering – Proctor and Gamble *Summer 2022*

- Led redesign of a robotic end-of-arm with compliant mechanisms, to improve plant productivity by 30%
- Tested and validated a Time-of-Flight 3D sensor for packaging quality assurance delivered to Packaging Group's satisfaction, saving $150K per production line on labor and equipment
- Researched steam flow meters, consulted with experts, and created a BVOA to recommend a steam flow meters for all plants worldwide leading to reduction of water and greenhouse emissions
- Researched and recommended water quality sensors to increase accuracy of water presence measurement in Beauty Care products, supporting business goal of increasing water efficiency by 35%

Product Supply Engineering – Proctor and Gamble *Summer 2021*

- Designed and built a novel kiss coater in SolidWorks to produce 1200 dental product prototype with paraffin wax substrate
- Developed high-velocity brush system to separate small staple fibers & improve diaper absorption by 10-25%
- Created desktop manufacturing test stands that improved R&D capability with a $120K/year cost saving
- Performed imaging analysis with high-speed camera to identify small-staple fiber separation during production

SKILLS

Engineering Design & Manufacturing: CAD (SolidWorks, SolidWorks PDM, Creo Parametric, OnShape), FEA Analysis (Ansys, SolidWorks), 3D printing, Mill, Lathe, TIG Welding, Laser Cutter

Computer Programming & Operating System: Python, HTML, CSS, JS, Java, C, C++, Arduino, Mac OS, Windows, Ubuntu Linux

Data Analysis: MATLAB, SAS, Azure, Excel (Data Manipulation, Pivot Tables and Statistical Analysis)