Sebastian B. Graper

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EDUCATION

University of Delaware — **December 2022**
Honors Bachelor of Science in Mechanical Engineering — GPA: 3.96; Magna Cum Laude; Dean's List: Fall 2019 – Fall 2022
Minors in Economics and Integrated Design — Newark, DE
Mechanical FE Certification — **May 2026**

RELEVANT INDUSTRY KNOWLEDGE

STATICS, DYNAMICS	MATERIALS ENGINEERING	FLUID DYNAMICS
MECHANICS OF SOLIDS	SUSTAINABLE MANUFACTURING	THERMODYNAMICS
MACHINE DESIGN	INDUSTRIAL DESIGN	HEAT TRANSFER

SKILLS

CATIA V5	Python/MATLAB	3D Printing	Material/Stock Selection
SOLIDWORKS	PTC Windchill	CNC Machining	Project Planning
Autodesk Fusion	FloEFD	Laser Cutting	Technical Documentation
Autodesk Inventor	GPTs	Power Tools	Presentations/Manuals
Drafting/GD&T	LabVIEW	Prototyping/Modelmaking	Professional Relations

EMPLOYMENT

Mechanical Engineer — Towson, MD
Stanley Black & Decker Power Tools Group + Technology - ETG — **July 2023 – July 2025**

- Create **iterative, functional prototypes** of novel products using **CATIA modeling**, **FloEFD simulation**, and **hand/power tools**
- Lead and participate in **design reviews**, contributing ideas and recording feedback as actionable changes
- Organize and control project CAD and documentation through **Sharepoint** and **Windchill PLM software**
- Maintain **project spreadsheets** to track progress on tasks, status of ordered parts, and overall project health
- Conduct **teardowns** of competing products and read manuals to **reverse engineer** mechanisms of operation
- **Troubleshoot** issues in electrical and mechanical function through **root cause analysis** and **design of experiments**
- Document promising ideas in **disclosures** for use by legal team to pursue **patents and IP**
- Manage **several projects concurrently** while **teaching new hires** and learning **new skills/software**

PROJECTS

Novel Motor Project — Towson, MD
Stanley Black and Decker — **April 2024 – July 2025**

- Designed **structural parts**, **thermal management**, and **electrical enclosures/routing** for motor project
- Leveraged **master/skeleton modeling** techniques to **accelerate design iteration** and enable **concurrent development**
- **Improved airflow performance by 36%** via insights gained from **FloEFD simulations and analyses**
- Implemented **DFMA principles** including locating features for assembly alignment, minimal/standard fasteners, etc.
- Optimized part designs for manufacture by **CNC machining**, **injection molding**, **sheet metal forming**, and **SLS printing**
- Created comprehensive **cost estimates** for varied scales of production and verified substitute parts to **meet target cost**

Pinball Machine – Designing/Fabricating an Electromechanical System — West Chester, PA
Personal Project — **March 2026 – Present**

- Perform **kinematics/physics** calculations powering **Python** analysis tools to constrain **motion of mechanisms**
- Design proofs of concept using **Autodesk Fusion, 3D printed prototypes**, maintain **version control** and part labeling
- Incorporate electronic control through **solenoids**, **limit switches**, **circuit design**, and **Arduino programming**

Senior Design Project – Polymer Composite Creep Testing Machine — Newark, DE
Sponsored by Celanese, formerly DuPont Mobility and Materials — **August – December 2022**

- Redesigned creep testing machines to **improve reliability** through use of dead weight force amplification
- Coded **data acquisition** program using **LabVIEW** to record sensor data based on operator-selected strain threshold
- Designed and machined custom sensor mounts for first-generation **functional prototype** using **SolidWorks** and **CNC mill**
- Produced a comprehensive **user manual** to guide system assembly, sensor setup, operation, and machine maintenance