**Lillian A. Blum**

**Local to Lancaster, Pennsylvania (Willing to relocate to Fort Lauderdale, FL)**

**Summary**

* Design high-performance coupling by selecting dimensions and materials based on customer requirements, API 671 and AGMA 9000 standards of coupling design
* Confirm drawings meet API 671 standards, AGMA 9000 standards of coupling design, and Ameridrives drawing standards. Perform revisions in Raster, CREO PARAMETRIC, and Inventor for research focused initiatives.
* Designed a Torque Stand which holds coupling in place during torqueing of bolts.
* Use Vantage to create Bill of Material’s for New Designs, Bill of Operation’s, Bill of Material’s for Repair, and Fastener Reports.

**Technical Skills**

* Software: Solidworks, AutoCad, CREO PARAMETRIC, Inventor, Visio, LabVIEW, 3-D Printing, Code of Motion, Simwise4d, Raster, Windchill, Oracle, Vantage, Epicor, MATLAB, PowerPoint, Excel, Word. Teams, Google, EPDM
* Hardware: Brinelled Hardness Tester, PMI Gun, Caliper, Dino Capture
* Certifications: First Aid/CPR/Chest Compression Certified, Balance Fixture Training Certified @ Schenck, ABS Class 1 Training Certified, Magnetic Inspection Training (Level 1)

**Education**

**Gannon University, Erie, PA August 2014- May 2018**

**Bachelor of Science: Mechanical Engineering**

**Work Experience**

**Carel U.S.A. Inc., Lancaster, PA Jan 2022 - present**

**Damper Subject Matter Expert/ Mechanical Engineer/ Acting Project Manager (ENGINIA Project)**

* Traveled to ENGINIA in Milan, Italy to validate BOM’s, part description, dimensions, material, specification, and drawing information with the goal of transferring manufacturing of Dampers Assemblies from ENGINIA to Carel USA. Analysis the manufacturing, assembly, and quality control for the Damper Assembly Units within ENGINIA. Create all new part number for assemblies, materials, and components to fit within our internal standards as well as for ease of use within ORACLE. Developed work instructions for manufacturing, assembly, and packaging for 16 different dampers assemblies from scratch.
* Implemented the pre-series, prototyping, and validation of the damper units once they arrived in Carel USA
* Facilitated bringing manufacturing of 3 damper lines which included a total of 16 unique unit from start to finish. Prior to the implementation of the ENGINIA project we were not participating in Damper manufacturing within the American market before this year. Initiated locally sourcing parts currently being supplied by ENGINIA including fasteners, plastic components, sheet metal frame, levers, brackets, and aluminum extrusions.

**Mechanical Engineer for R&D Dec 2021 –present**

* Created BOM, PART ENTRY, ROUTINGS, and ECO’s within ORACLE. Developing and improving work instruction for these tasks.
* Sourcing, testing, inspecting, and gaining approved of new components using our internal homologation process called OMA’s: This includes doing part inspections, creating functional tests, test procedures, test implementation, and reporting test results. Confirm parts meet international, local, and internal specification.
* Create work instructions for internal processes, started a work instruction improvement committee.
* Creating new drawing, models, manuals, addendums, work instruction, testing, pre-series, and technical documents for new products within the facility.

**Ameridrives Couplings, Erie, PA May 2018-Nov 2021 Design Engineering, High Performance Division**

* Design high-performance coupling by selecting dimensions and materials based on customer requirements, API 671 and AGMA 9000 standards of coupling design. Conduct stress analysis on diaphragm pack, hub, spacer, bolt, and other components to determine the stress capability for infinite life operation. Calculation of assembly tolerance stack ups, clearances, stress concentration factors, and residual un-balance.
* Review and Approve drawings for customer orders and customer inquiries. Confirm drawings meet API 671 standards, AGMA 9000 standards of coupling design, and Ameridrives drawing standards. Perform revisions in Raster, CREO PARAMETRIC, and Inventor for research focused initiatives, while maintaining drawing uniformity.
* Handle final dispositions of all Non-Conformance Review for parts being made in the shop. Gain experience in determining if a part would be acceptable as is, reworked, or scraped based on complexity level of the discrepancy.Evaluate inspection reports for coupling that had been in service. Determine what parts on coupling are functionally acceptable, and what needs replaced or rework on used couplings. Create rework proposal for customer approval and then detailed repair instruction for manufacturing to perform.
* Designed a Torque Stand which holds coupling in place during torqueing of bolts.
* Use Vantage to create Bill of Material’s for New Designs, Bill of Operation’s, Bill of Material’s for Repair, and Fastener Reports.

**Mechanical Engineering Intern, U-Joint & Mill Spindle Division May 2017-May 2018**

**Ameridrives Couplings, Erie, PA**

* Updated drawings and model in CREO PARAMETRIC and Rastor. Perform drafting duties including updating GD&T and standard drafting formatting practiced in the workplace.
* Gained experience dealing with vendors, generating building model plans, material expenses, and labor expenses for a kaizen of the lab and office space renovation proposal to corporate worth $650,000.
* Designing coupling transportation housing to prevent damage to customer parts.
* Participate in Lean Manufacturing initiatives and kaizens. Lead the Red Tag initiative to eliminating clutter in the workplace.

**Gannon University (ITS Help Desk), Erie, PA May 2016 – August 2017**

**Student Computer Aide**

* Worked ten hours a week while maintaining an academic course load of eighteen credit hours.
* Assisted guests with wi-fi, virus, software, malware, and password issues while documenting customer problems and interactions.

**Waldameer & Water World, Erie, PA May to September 2013 - 2015**

**Concessions Worker**

* Worked sixty plus hour weeks to save money for college tuition and books.
* Maintain a “customer first” approach in a busy environment with multiple demands
* Food preparation, cleaning & attending to customers

**The Residence Inn, Erie, PA January 2014 – Aug 2015**

**Front Desk Clerk & Social Hostess**

* Worked twenty plus hours a week while maintaining an academic course load of eighteen credit hours.
* Assisted guests with reservations, food, drinks, cleaning, etc.

**Gannon University (ME Lab), Erie, PA August 2014 – May 2015**

**Mechanical Engineering Lab Monitor**

* Worked ten hours a week while maintaining an academic course load of eighteen credit hours.
* Monitored students to help with printing issues, or login issues.
* Prevent eating, drinking, and inappropriate behavior during lab hours.
* Assisted in monitoring tests during lecture hours.

**Research Assistant (Special Project - Paid Internship)**

**Gannon University, Erie, PA August 2015 – May 2018**

**Research Assistant, Bio-Medical Engineering Department**

* Assisted Dean of Bio-Medical Engineering in update cameras and coding of acquisition, calibration, and recalibration programs within MATLAB and Python. Investigate and resolve coding errors within the original source code.
* Performed testing using Code of Motion to obtain 3-D parameter data to feed into the acquisition, calibration, and recalibration programs. Evaluate the programs efficiency and compare with other programs that obtain the same information.
* Oversaw and delegated tasks to a group of five undergraduate students. Worked with graduate level students to write research papers.

**Research Publications**

I. Felipe M, Antonio C, Maya M, Bortoletto R, Blum L, Piovesan D. (2016). Sensor-Fusion Approach for the Characterization of Human Walking. ASME. ASME International Mechanical Engineering Congress and Exposition, Volume 3: Biomedical and Biotechnology Engineering. V003T04A053. doi:10.1115/IMECE2016-66049.

II. D.J.M. Martinez F, Blum L, Rider S, Cardenas A, Piovesan D. (2017). Underwater Tracking System Based on Camera Space Manipulation: Static Calibration of GoPro Cameras. ASME. ASME International Mechanical Engineering Congress and Exposition. IMECE2017: IMECE2017-71795

III. Felipe Martinez, Adam Mihalko, Lillian Blum, Antonio Cardenas, Davide Piovesan. (2018). Is Linear Camera Space Manipulation Impervious to Systematic Distortions. ASME Publishing. Two Park Avenue. New York, NY 10016. IMECE2018-87645. IMECE2018.

**Organizations/Activities**

**GUDEVBOT Member @ Gannon University, Erie, PA Fall 2015 - 2018**

* Assist with project planning, part design, and 3-D part modeling in CREO. Parts for projects were printed on the clubs 3-D printer using the program Slicer. I attended these meeting on a weekly to bi-weekly basis.

**Society of Women Engineers (SWE)-Member @ Gannon University, Erie, PA Fall 2014 - 2018**

* Develop professional skills including marketing, communication, and business development for women in stem to achieve success.
* Attended regularly held meeting on campus and seminars hosted by SWE.

**Relevant Theoretical Coursework**

Physics 3-5, Chemistry, Calculus 1-4, Statics, Dynamics, CREO PARAMETRIC, MATLAB, Instrument and Measurement, Advance Thermodynamics, Strength Materials, Advance Strength Materials, Machine Elements, Kinematic Mechanisms, System Dynamics and Control, Computer Aided Design, Vibrations, Alternative Energy Solutions, Heat Transfer, Fluid Mechanics.

**Certifications**

MAGNETIC INSEPCTION TRAINING Level 1

(NOT OFFICALLY CERTIFIED)

June 3rd - 5th, 2019

FUNDAMENTALS OF BALANCE

RECEIVED A CERTIFICATE OF COMPLETION April 2nd - 4th, 2019

ABS TRAINING (Lean Manufacturing Training)

RECEIVED A CERTIFICATE OF COMPLETION August 14th – 16th 2018

Solidworks Drawing Course Course completed using Hawkridge’s Training Program

RECEIVED A CERTIFICATE OF COMPLETION June 13, 2022

Solidworks Essentials Course Course completed using Hawkridge’s Training Program

RECEIVED A CERTIFICATE OF COMPLETION May 24, 2022

Solidworks Advanced Part Modeling Course Course completed using Hawkridge’s Training Program

RECEIVED A CERTIFICATE OF COMPLETION March 6, 2023

Lean White Belt Training Lean Academy in HCM learning platform Certification

RECEIVED A CERTIFICATE OF COMPLETION December 12, 2021

Lean Yellow Belt Training Lean Academy in HCM learning platform Certification

RECEIVED A CERTIFICATE OF COMPLETION January 10, 2022

Project Management Training private training company

November 2nd – 3rd, 2023