

Phillip Szymanowski

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Innovation and hands-on engineer with expertise in prototype development, mechatronics, manufacturing, manufacturability, cost reduction, and system architecting seeking a senior-level Engineering position at a cutting-edge tech organization. Currently pursuing a Master's degree in Systems Engineering from Johns Hopkins University, I am eager to contribute my expertise to the next advancements in technology and automation.

Professional Experience

Lead Systems Engineer, JLS Automation Inc.

March 2021 — Present

- Technical lead for capital automation equipment with accumulated prices totaling over \$40 million
- Consistently in communication with vendors and suppliers, regularly leading technical design reviews to ensure compliance with project requirements and standards
- Collaborate with cross-functional teams including electrical, software, and mechanical engineers to develop and integrate robotic and mechatronic systems to automate production lines
- Perform analytical simulations and prototype testing to validate system performance and identify areas for improvement throughout the development and design stages of each project
- Commissioning, installing, and troubleshooting of automated systems at customer facilities, including programming in B&R Automation Studio, Cognex Insight vision, LMI 3D vision, and SVN version control

Mechanical Design Engineer, CHL Systems Inc.

March 2018 — March 2021

- Lead the conceptualization and design of automation products, systems, and entire facility layouts for various industrial applications from quoting to installation
- Guided groups of three-five designers, detailers, and engineers in development of multi-million dollar systems
- Designed hydraulic, pneumatic, and other electro-mechanical automation systems that varied in complexity from only a few components to thousands of unique parts that integrated with other plant equipment
- Utilized PDM version control software to track the states of designs throughout the engineering process
- Developed the mechanical design of a standard conveyor system with two other engineers in DriveWorks to minimize design and detailing time which increased throughput by 25%
- Developed engineering department intranet, a collection of resources and SOPs for ease of access and department consistency including an engineering calculator to standardize engineering designs and reports

Mechanical Design and Manufacturing Engineer, Hart Mechanical Contractors Inc. May 2017 — March 2018

- Designed structural, sheet metal, and other hardware components and assemblies for manufacture in Inventor, Solidworks, and AutoCAD
- Created technical drawings for a wide range of fabrication methods including water jetting, forming, welding, and machining of various carbon, stainless steels, and aluminum alloys
- Performed structural and Finite Element Analysis (FEA) on 1000+ sq ft refrigeration enclosure assemblies under snow and wind loads using Inventor Simulation Suite to comply with IBC and customer requirements; designs were iterated based on results from FEA

Variable Cam Timing Product Engineering Co-op, BorgWarner Morse TEC May 2014 — May 2015

- Facilitated product engineers in design and manufacturability of prototype and production cam phasers used in various models of Ford, Hyundai, and Chrysler vehicles
- Reviewed and modified GD&T of prototype prints to ensure quality, clarity, and consistency to suppliers
- Compiled engine dyno test data to evaluate product durability and performance on various iterations of VCT prototypes; presented results to product engineers to inform the design and understand failure modes
- Created and developed a test procedure for phaser durability analysis using modified chain durability machine
- Collaborated with European engineering division to perform durability and dyno testing followed by delivering a report detailing FMEA of an upcoming product line manufactured in Europe

- Performed teardowns of competitor products to understand technological developments and opportunities to adapt new designs or capabilities. Generated reports of findings and potential designs that could be implemented on Borg Warner phasers

Machinist, Baum Precision Manufacturing

June 2012 — October 2012

- Set up and operated three and four axis CNC mills including fixturing, tooling, speeds, feeds, and offsets
- Machined, inspected, and deburred high-precision aeronautical aluminum, stainless, and carbon steel parts
- Identified and resolved manufacturing complications and out-of-spec components throughout production runs with on-site engineer and CAM professional
- Designed and machined fixtures for high-volume aeronautical and medical device production

Manufacturing Intern, PH Tool

May 2011 — December 2011

- Operated CNC mills, lathes, surface grinders, and various other machinery in precision production setting
- Inspected parts using precision metrology equipment including calipers and micrometers, CMMs, VMs, profilometers, height and pin gages, and visual inspection microscopes
- Designed fixtures to increase single process capacity for high-volume production of ASME and ANSI Non-Destructive Test (NDT) blocks which increased product throughput by 30%

Education

Johns Hopkins University, Masters of Science, Systems Engineering MSE

Est. June 2027

The Pennsylvania State University, Bachelors of Science, Mechanical Engineering BSME

December 2016

Relevant Coursework

PSU Bachelors:

ME 445 – Microcomputer Interfacing

ME 456 – Industrial Robot Applications

ME 481 – Computer-Aided Analysis of Machine

EDSGN 497 – Advanced SW Modeling and Dynamics

ME 450 – Modeling of Dynamic Systems

JHU Masters:

EN 645-764 - Software Systems Engineering

EN 645-767 - System Conceptual Design

EN 645-667 - Management of Systems Projects

EN 645-768 - System Design and Integration

Relevant Software Proficiencies

SolidWorks - 17 years - CWSP

AutoCAD - 12 years

Onshape - 10 years

Autodesk Inventor – 15 years

Autodesk Fusion 360 - 6 years

Cognex Insight - 4 years

Autodesk 3DS MAX - 6 years

MATLAB - 4 years

Excel - 20 years

Java - 4 years

R - 1 Year

Git Version Control - 7 years

SVN Version Control - 4 years

B&R Automation Studio - 4 years

Volunteer Experience

Engineering, Design, and Strategy Mentor, FIRST Robotics Competition Teams

August 2007 – Present

- Managed team of 10-15 middle and high-school students in designing a competition robot and promoting the ethos of FIRST within the wider community
- Communicated engineering design methodology and other technical knowledge to teams of students
- Developed system requirements, performed time analyses, and used weighted decision matrices
- Demonstrated proper use of industrial manufacturing equipment and tools for safety and precision
- Shared insight on best CAD practices to ensure manufacturability and consistency of components

Pennsylvania State Lehigh Valley Campus Advisory Board

September 2019 – June 2023

- Invited to be a member of the board that gives guidance and feedback to development and growth of campus