ALEXANDER BENSON

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Education

M.S. Mechanical Engineering
Grad: May 2024, GPA 4.0
Saint Martin's University (SMU) | Lacey, WA
Thesis: "Mobile Magnetic Material in IPMSM Applications"
Advisor: Frank Washko, Ph.D. J.D.

B.S. Manufacturing Engineering, ABET Accredited, **Mathematics Minor**
Grad: June 2016, GPA 3.25
Western Washington University (WWU) | Bellingham, WA

Patents & Publications

2024. The Transpolar Motor.
USPTO 63/668,775, filed 07/09/2024. Patent pending.

Simulating a Piezoelectric-Haptic MEMS Actuator in Low-Frequency Vibration
Conference Paper, *ASME IMECE*, October 2022

Skills

- Proficient with CAD Software: CATIA and SolidWorks.
- Proficient with ANSYS Simulation: Structural and Electro-Magnetic/Maxwell.
- Experience with MATLAB, R, and Python programming.
- Experience in Education, Project Management, and Leadership.
- Experience with Engineering Analysis:
  - EV Motor Design
  - Finite Element Analysis (FEA)
  - Vibrations Analysis
  - Six-Sigma Methodology
  - Optimization
- Seven years of manufacturing and assembly experience, including:
  - Machining
  - Automated Bonding with Cobots
  - 3D Printing
  - Manual Assembly and Bonding

Work Experience

Operations Support Supervisor
June 2022 – Present
PACCAR: Kenworth Truck Division | Kirkland, WA

- Facilitated engineering education across PACCAR on subjects ranging from Additive Manufacturing to Design for Manufacturing (DFM).
- Primary educator for DFM within PACCAR in the PNW.
- Championed the adoption of advanced costing-analysis software across PACCAR.
- Oversaw a high-performing team of manufacturing engineers who saved over $1.2M in Six-Sigma savings and submitted 6 Six-Sigma projects in 2022.
- Led the creation of two expertise groups: DFM and 3D Printing.
- Coordinated the annual, $350k, contract for PACCAR's DFM software.

Manufacturing Engineer
Jan 2017 – May 2022
Tool Gauge (TG) | Tacoma, WA

- Trained team members in assembly, robotic programming, and machine setups.
- Wrote work instructions, ensuring operators and technicians performed their work in compliance with Boeing specifications.
- Utilized 3D (FDM) printers to produce on-demand fixtures and test processes and reduced the cost of existing fixtures by over 50%.
- Designed cobotic bonding cell supporting six-part configurations.
- Designed a quick-change system for sprue picker end-of-arm tools.

Teaching Assistant: CAD (CATIA) and CAM (G-Code and Vericut)
March 2014 – June 2016
Western Washington University (WWU) | Bellingham, WA

- Advised and guided students on CAD best practices for solid and surface modeling.
- Identified and assisted students in correcting errors in G-Code and CAM-work.
- Graded CAD work and G-Code.

Student Tutor: Physics, Chemistry, Math
September 2013 – June 2016
Western Washington University (WWU) | Bellingham, WA

- Guided students through supplemental physics, chemistry, and math education.
- Assisted students with coursework by providing learning tools and resources.

Leadership Experience

Chair-Emeritus, Seattle Chapter of the Society of Manufacturing Engineers
Jan 2024 – Present
Seattle Chapter 39 | Seattle, WA

- Networked with industry partners to arrange tours, contacts, and speaking events.
- Led SME Seattle's 2024 PNW Roundtable, featuring a record 55 attendees. Presentations:
  Medical Applications of 3D Printing and On-Site Manufacturing at the Seattle VA
  Berardo-Cotes, Alexander and Hotz, Alexander.
  Obstacles to Metal 3D Printing Adoption within the Aerospace Industry
  Sousa, Emily.
  Designing for Additive Manufacturing with SolidWorks
  Shah, Dipesh and Steeves, Michael.

Chair, Seattle Chapter of the Society of Manufacturing Engineers
Jan 2021 – Jan 2024
Seattle Chapter 39 | Seattle, WA

- Managed chapter recovery during the Covid-19 pandemic.
- Promoted and participated in student mentoring events.

References

Frank Washko, Ph.D., J.D. Associate Professor Hal and Inge Marcus School of Engineering St. Martin's University Lacey, WA 98503 fwashko@stmartin.edu	**Brett Kelley** Advanced Mfg. Eng. Manager Kenworth Truck Company PACCAR Kirkland, WA 98033 Brett.Kelley@PACCAR.com
Matthew Clegg Community and User Advocacy Manager SolidWorkS Dassault Systèmes Royal Oak, MI 48067 matthew.clegg@3ds.com	