ALEXANDER BENSON

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Skills

- 6 years of manufacturing and assembly experience, including:
  - Composites
  - Machining
  - Automated bonding w. cobots
  - 3D printing
  - Injection molding w. robots
  - Manual assembly and bonding
- Experience with Engineering Analysis:
  - Statistics:
    - Process control
    - Multivariable regression
  - Finite Element Analysis (FEA)
  - Optimization
  - Design of experiments
  - Vibrations analysis
  - Elementary control systems design
- Experience manufacturing in a regulated environment:
  - ANSI9100
  - ANSI/RIA 15.06
  - Boeing specifications
  - ISO 9000
  - ISO/TS 15066
- Experience with MATLAB, R, and Python programming.
- Proficient in designing, assembling, and debugging tools and fixtures.
- Proficient with CAD software – CATIA V5, SOLIDWORKS, AutoDesk Inventor.
- Leadership experience demonstrated through volunteer work.

Work Experience

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

- Established a reputation for high-quality work delivered ahead of schedule.
- Ensured manufacturing compliance to Boeing specifications, AS9100 requirements, and OSHA robotic safety requirements (ANSI/RIA 15.06).
- Utilized 3D (FDM) printers to produce on-demand fixtures, test processes, and reduce the cost of existing fixtures by over 50%.
- Designed cobotic cell supporting six part configurations saving an estimated $200,000 per year, featured on the Universal Robots website.
- Developed software tool for tracking changes in customer purchase requests, saving hours of work every month for project managers and executives.
- Led sprue picker (robotics) implementation of TG's next-generation presses.
- Designed quick-change system for sprue picker end of arm tools.
- Programmed complicated picking operations for tools with intricate cavities.

Associate Civil Engineer
Jun 2016 – Aug 2016
City of Seattle | Seattle, WA
- Facilitated project coordination and inter-department communication.
- Developed procedures detecting conflicting projects in critical locations.
- Managed and assisted communications between public and private industry stakeholders throughout the City of Seattle.

Teaching Assistant: Computer Assisted Machining and Computer Assisted Design
Apr 2015 – Jun 2016
Western Washington University | Bellingham, WA
- Walked students through problem-solving methods when programming in G-Code, using CAD (CATIA V5), and CAM (CATIA V5 and Vericut).
- Demonstrated troubleshooting abilities when evaluating and correcting G-Code and CAD models submitted by students.

Student Tutor: Physics, Chemistry, Math, and Statistics
Sept 2013 – June 2016
Western Washington University | Bellingham, WA
- Educated students in technical subjects, primarily through problem-solving, intensive tutoring was possible when time allowed.
- Collaborated with both supervising instructors and a team of my peers.

Volunteer Experience

Chair, Society of Manufacturing Engineers
Seattle Chapter 39, Jan 2021 – Present
- Coordinated and directed monthly chapter meetings.
- Managed chapter recovery during the Covid-19 pandemic.
- Networked with local industry partners and organizations to arrange tours, contacts, and speaking events.
- Supervised outreach events to student and national chapters.
- Led chapter executive infrastructure improvements.

Chair-Elect, Society of Manufacturing Engineers
Seattle Chapter 39, Oct 2019 – Jan 2021

President, Society of Manufacturing Engineers: WWU Chapter
Jun 2015 – Jun 2016

- Organized community events, groups for multiple competition entries, inter-club co-operation.
- Facilitated the development of 3D printing maker space for the university engineering department.

Education

Saint Martin's University (SMU), GPA 4.0 Grad: 5.2022, *Anticipated*
Lacey, WA
M.S. Mechanical Engineering
Thesis: *Characterizing the Hayward-Robles Phenomena Using a Haptic Actuator*

- Electromechanical Machines
- Control Systems Design
- Optimization with MATLAB
- Vibrations
- Photovoltaics
- Finite Element Analysis (FEA)
- Robotics

Western Washington University (WWU) GPA 3.25 Grad: 6.2016
Bellingham, WA
B.S. Manufacturing Engineering, ABET Accredited Mathematics Minor

- Advanced CAD
- Advanced CAM
- Automation and Control
- Composites Design and Manufacturing
- Design for Manufacturing
- Design of Tooling
- Industrial Robotics
- Plastics Design and Manufacturing
- Statistics with Calculus