

Christopher Carty

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Education

Texas Tech University, Lubbock, Texas

Graduation: May 2020

GPA: 3.16

- Bachelor of Science in Mechanical Engineering at Whitacre College of Engineering
- Minor in Mathematics
- Senior Design: Chassis dyno for Formula SAE team

Study Abroad: Texas Tech Seville Center: Seville, Spain

Summer 2017

- Spent 6 weeks exploring Seville, Portugal, Madrid, and Morocco
- Relevant coursework: Construction safety, Linear algebra

Job Experience

Advanced Particle Detection Lab, Texas Tech University, Engineer

August 2022 - Present

- Project lead for automated sensor manufacturing
- Design components used to make up automated assembly
- Institute methods/procedures for repeatable component manufacturing
- Void minimization in adhesive joints
- Manage team and determine scheduling

Center for Emerging Energy Sciences, Texas Tech University, Engineer

May 2019 – Present

- Worked as part of a team designing new and innovative equipment/experimental supports while observing NDA requirements
- Manufacture aluminum, steel, and polymer components with Tormach CNC
- Rapid prototyping utilizing FDM and SLA printing.
- Regularly built or maintained Ultra High Vacuum (UHV) systems working with diaphragm pump, two-stage rotary pump, turbo pump and ion pumps
- Co-designed and patent Ventilator
- Design various fixtures for manufacturing processes
- Designed an automated control system in order to maintain experimental conditions. System utilizes microcontrollers and pneumatics
- Designed and built mass spectrometer peripheries
- Built high voltage pulsing system according to specifications and safety standards

AR Machining, Hutto, Texas, Machinist/Quality control

January 2012 - August 2019

- Responsible for shipping and receiving of products/material
- Worked with quality control and deburr department
- Ran and repaired Mazak CNC machines, and manual machines
- Developed drawing packages for fabrication and assembly
- Debugged and troubleshoot tooling and equipment

Skills

Technical skills

- CNC and manual machine manufacturing
- Welding experience (ARC/MIG/TIG,Orbital)
- OSHA 30 hr certification
- ANSYS workbench software (FEA and CFD)
- Inventor and Solidworks 3D CAD modeling softwares
- Microsoft office
- Fusion 360 CAM software
- 3D printing (FDM and SLA)

Patents

- **Innovations in Emergency Airway Management: Lessons-Learned from Early Cross-Cultural Management of Covid-19.**
 - AL Sobel, RV Duncan, C Lin, R Baca, C Carty, T Dardik – Technology & Innovation, 2022
- **Metal Hydride Production in Sealed Environment**
 - Robert V. Duncan, Cuikun Lin, Andrew Gillespie, Christopher Carty, Ian Jones, John Gahl
 - Submitted for evaluation
- **A new sustainable device for electrochemical synthesis of Ammonia**
 - Robert V. Duncan, Cuikun Lin, Ian Jones, Christopher Carty
 - Submitted for evaluation

Involvement

Sigma Phi Delta, Engineering Fraternity, New Member Chairman

Spring 2016 – 2020

- New member chairman
- Social committee
 - Weekly meetings to discuss plans for future events, outline budget standings, etc.
 - Regularly enforced and exercised risk assessment and risk management