Peter Carlson

Santa Rosa, California, United States ✉ pgcarls@ucdavis.edu ☐ 805-453-5488 🔗 https://www.linkedin.com/in/peter-carlson-126b04175/

☁ https://petergcarlson.com/

SUMMARY

Electrical and Materials Engineer with over 3 years of experience in design, test, and implementation of next-generation technology. Proven knowledge of design and optimization of materials and electrical systems, including the development of new products and processes.

EXPERIENCE

Electrical and Materials Engineer

Thermal Technology   **January 2021 - Present, Santa Rosa, CA**

· Programming PLCs to integrate controls for various devices and design safety interlocks on $40 million a year of furnace systems to ensure safe operations.

· Programming various apps for engineering use in C# and writing Engineering data to a SQL database for use in designing systems and dispatching customer service tickets.

· Troubleshooting electrical and programming issues with furnace operation during testing of systems.

· Managed 3 multi-million dollar projects in my first year with programming updates and testing at customer install sites.

Data Scientist

NOVIM   **July 2019 - September 2019, Santa Barbara, CA**

· Programmed an accessible, educational, and interactive MATLAB model that simulates the energy sector impact on the global climate over the next 30 years using customizable electrical energy production inputs and resultant global temperature rise estimations.

· Verified the authenticity of the mathematical model by comparing results with established climate models from research articles.

Research Assistant

UC Davis   **January 2018 - October 2020, Davis, CA**

· Acted independently on research into the synthesis of Hf_2Te_2P and measurements on the quantum oscillatory properties of the synthesized crystals under induced magnetic field.

· Analyzed synthesized crystals for phase purity using an XRD system and using an MPMS system to measure the magnetic moment of the material to observe quantum oscillatory behavior at high magnetic fields.

· Responsible for submitting quarterly progress and research reports on the progress of my research and goals for next quarter as well as keeping up to date with safety protocols.

PROJECTS

Senior Design Project

Keysight Technologies · January 2020 - June 2020

· Designed and programmed a software package in MATLAB and python to simulate realistic eutectic die bond attach processes, currently used to evaluate possible bond processes for over 50 MRSI machines.

· Researched materials parameters for Gold-Tin eutectic solder compositions.

· Awarded "Best Senior Design Project" in the Materials Science and Engineering Department and ranked in the top 5 finalists for the Sandia Design Award out of 123 teams from all UC Davis Engineering Departments.

Co-author of "Topological surface states above the Fermi energy in Hf_2Te_2P"

UC Davis · January 2017 - August 2019

· Fabricated sample of material for cross-disciplinary team through quantitative analysis of synthesis parameters.

· Findings discover a tunable electronic band structure in the material through SEM and ARPES measurements suitable for permanent magnet or semiconductor applications in future work.

· Collaborated with cross-disciplinary team at UC Davis and Lawrence Berkeley Laboratories to facilitate scientific measurements.

EDUCATION

Master of Engineering in Materials Science and Engineering

UC Davis · Davis, CA · 2021 · 3.588 GPA

Bachelors of Science in Materials Science and Engineering

UC Davis · Davis, CA · 2020 · 3.78 GPA

SKILLS

Python, C#, R, SQL, MATLAB, PLC Programming (Eurotherm, Siemens, and Allen Bradley), PPMS, MPMS, XRD, PLD, Data Science, Literature Review, Agile Program Management, Project Management