

Joseph N. Quarshie

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Education

University of the Pacific, Stockton - CA

Master of Science in Mechanical Engineering – 3.90 GPA

Expected May 2025

Focus: Utilizing computational science for advancements in robotics and scientific simulation.

Key Classes:

- | | | |
|---------------------|------------------------------|-----------------------------|
| – Combustion | – Computational Intelligence | – Character Animation (C++) |
| – Numerical Methods | – Advanced Mechatronics | – Computer Aided Machining |

University of the Pacific, Stockton - CA

Bachelor of Science in Civil Engineering – 3.54 GPA, Cum Laude

August 2019 - June 2023

Key Classes:

- | | | |
|---------------------------|--------------------------|--------------------------|
| – Finite Element Analysis | – Material Science | – Structural Engineering |
| – Differential Equations | – Mechanics of Materials | – Steel Design |
| – Thermodynamics I | – Fluid Mechanics | – Dynamics |

Work Experience

R&D Graduate Mechanical Eng. Intern | Sandia National Laboratories

June 2024 – Present

- Explosive Materials or Division 7K, working on the R&D of isotherm mapping regarding the PCT space utilizing thermogravimetric analysis and a quartz crystal microbalance. Secondary project of the structural design of systems to handle various loads of overpressure.

Graduate Assistant (Fellowship) | University of the Pacific

August 2023 – Present

- Assist professor in grading course work – providing tutoring for the students in need.
 - *Tutored Courses: Material Science, Fluid Mechanics, Steel Design, Mechatronics, Water Resources, Geotechnical Engineering*

Mechanical Eng. Intern (R&D) | TriContinent Scientific

June 2022 – December 2022

- Design and test tools, performing tests and collecting feedback from operators and Lead engineers to adjust designs accordingly utilizing SOLIDWORKS and 3D printing.

Projects

Thermogravimetric Analysis Utilizing a Quartz Crystal Microbalance – Sandia NL

June 2024 – August 2024

- Create a procedure to precisely map the isotherm pressure-composition-temperature (PCT) space utilizing a quartz crystal microbalance with a specialized crystal within thermogravimetric analysis.

Renovation and Relocation of Fire Station No. 39 – University of the Pacific

January 2023 – May 2023

- Project Leader; Oversee and direct Geotechnical, Structural and Hydrologic aspects of the proposed project.
- Sustainability Lead – Designed bioretention areas and implemented LEED and ENVISION criteria.
- CEQA Compliance through a Negative Mitigated Declaration.

Miniature Gravimetric Testing System - TriContinent Scientific

July 2022 - December 2022

- Create a system capable of repeatable accurate gravimetric tests for pump data collection.
- Document all aspects of system, including a breakdown of working ranges, compressional and tensional forces, mechanical advantage, creating a working assembly in SOLIDWORKS.
- Utilize Python / C++ to control and script Dobot Magician Robot.

Certifications

FE Examination, EIT Certification

Earned: August 17th, 2023

Skills

- | | | |
|----------------------------|----------------------------|-------------------|
| • Machining, Manufacturing | • MATLAB; C; Python; Excel | • SOLIDWORKS |
| • Finite Element Analysis | • Technical Pres./Reports | • Team Leadership |

Extra Curriculars

Theta Tau; Professional Engineering Organization

January 2020 – May 2023

Positions Held: Regent (President), New Member Educator, Community Service Coordinator, Alumni Advisor