Quintin de Jongh

Mechanical Engineer & Lecturer

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Summary

Organized and ambitious mechanical engineer with a passion for design and advanced manufacturing. Seeking to use process and product design skills to develop cutting-edge machinery and processes. Created a state-of-the-art mechanical polishing process and machine at the University of Cape Town in six months, saving 20% of the budget for machine manufacture. Convened a third-year mechanical engineering course of 120 students, educating on advanced and conventional manufacturing processes.

Education

MASTER OF SCIENCE IN MECHANICAL ENGINEERING

2021 - 2022

University of Cape Town
Overall Grade: Distinction, A+
Dissertation Title: “Flexible Media Polishing Machine for Ti-6Al-4V Components”

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

2016 - 2020

University of Cape Town
Overall Grade: A-
Dean’s Merit List for the 2017 Academic Year.
Certificate of Merit for Exceptional Performance in Computer Science Course
Extracurricular activities: UCT Football

Professional Experience

LECTURER

March 2022 - Present

University of Cape Town

- Convened, examined and prepared course content for classes of 120 students.
- Increased the overall course grade average by 10% from the previous year’s class.
- Managed and trained four tutors in both student assistance and course administration.

GRADUATE ENGINEER

March 2022 - Present

BMEC Technologies

- Assisted with professional mechanical designs through multiple revisions.
- Developed a PDF report generator and associated widget using Flutter.
- Learned PCB design through the use of CircuitStudio and an applicable project.
- Aided in assembling multiple electro-mechanical controllers for use on industrial farms.

TEACHING ASSISTANT AND TUTOR
February 2021 - June 2022
University of Cape Town
- Created course content for assessment of a materials selection software.
- Tutored seven different exit-level engineering courses over a year and a half.
- Assisted with course administration and marking.

Journal Publications

International Journal of Advanced Manufacturing Technology
August 2022
"Spring-Dashpot Vibrational Model for the Investigation of Viscoelasticity in Gelatinous Abrasive Media and Subsequent Control of Parameters for the Blast Polishing of Ti-6Al-4V Alloy"

Journal of the Brazilian Society of Mechanical Sciences and Engineering
May 2022
"Polishing of a Selective Electron Beam Melting Processed Tungsten Carbide Punch through High Velocity Impinging of Flexible Media"

International Journal of Advanced Manufacturing Technology
May 2021
"A study on intelligent grinding systems with industrial perspective"

Skills

SOLIDWORKS 100%
- Designed and modeled a micro-polishing machine with multiple mechanical sub-assemblies.
- Developed a wearable accessory holder as well as appropriate accessories with complex curvature and mechanical features (annular and cantilever clips, screw fastening systems).

MATLAB 80%
- Created an analytical-empirical model of the damped interaction between a diamond coated gelatinous abrasive and rough surface.
- Produced a MATLAB application (GUI and scripts) and associated MS Access database for the live prediction and improvement of surface grinding process parameters.

DAQ (Dewesoft and LabVIEW) 70%
- Gathered experimental data for both a surface grinding and micro-polishing process.
- Created experimental plans and GUIs for data acquisition of surface-grinding and micro-polishing processes.

MS Office 90%
- Experienced in MS Office, Word, Access, Excel, Powerpoint and OneNote.

Research | Report and Academic Writing 100%
- Involved in six academic publications over the course of a year and a half.
- Completed two academic research projects in advanced manufacturing, achieving A+ grades in both.

Python 65%
- Tutored courses involving the development of vibrational and simulation models using python.
- Completed courses on python fundamentals, OOP and OOP design, data structures, and algorithms