



Quintin de Jongh

Mechanical Engineer

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Summary

A highly devoted Mechanical Engineer with close to three years of industry experience in designing and developing deeply technical and innovative products. Proven track record in optimizing designs, commissioning systems, diagnosing mechanical problems and managing projects from concept to completion. Skilled in SolidWorks, Creo, AutoDesk CFD, TwinCAT PLC and a large variety of coding languages. Adept at formulating product specifications, problem-solving and collaborating with cross-functional teams to complete tasks within demanding time-frames.

Professional Experience

Mechanical Engineer

January 2023 - Present

Skeg Product Development

- Engineering lead and project manager for the successful design, development, testing, commissioning and experimental validation of a high temperature Hydrogen Reformer (through two prototype iteration cycles). Furthermore, I retained the customer to begin transition to commercial product development. I coded a complex control and automation software/HMI using TwinCAT 3 and developed a front-end web application using Angular. I approached the project with both a hands on approach (involving tasks such as: leak testing, assembly, welding and fabrication); as well as an engineering design and management approach (involving: CAD and mechanical design, thermodynamic and mathematic modeling, simulations (CFD and FEA), electromechanical design, client progress and design meetings, and budgeting).
- Led and managed the design and development of a Direct Contact Membrane Distillation Desalination product for distribution across Saudi Arabia. Optimized flow patterns across the membrane using CFD, fluid mechanics and thermodynamic modeling. Designed an efficient thermodynamic system to transfer water energy using a heat pump, used CAD extensively for both the industrial and mechanical design of the product as well as to simplify simulation modeling. I coded the automation and HMI software single handedly as well as single handedly commissioned the prototype through experimental validation (using DOE techniques).
- Provided mechanical support on multiple projects including: tolerance and geometrical analysis on a precision airfield light alignment tool, structural analysis of large moulded fruit picking crates, data analysis for alginate development and sheet metal design for frames and casings.

Graduate Engineer

March 2022 - December 2022

BMEC Technologies

- Assisted with the development and commissioning of an Ozone Dispersion product for sanitation; learning sound mechanical and mechatronic design principles.
- Supported the development of a zone-based automatic seed dispersion device with incorporated micro controller; by aiding in Flutter web application coding, micro-controller coding, PCB design and assembly of the devices.

Education

MSc in Mechanical Engineering (with Distinction)

February 2021 - April 2022

University of Cape Town

Thesis: "Flexible Media Polishing Machine Design, Development and Experimentation for the Polishing of Ti-6Al-4V Components"

BSc in Mechanical Engineering

January 2016 - December 2020

University of Cape Town

Thesis: "Development of an Intelligent Grinding System", awarded with Distinction
Dean's Merit List for High Academic Achievement (2017)

Relevant Skills

- Product and Mechanical Design
- Machine Building
- Machine Control and Automation
- System Design
- Mechanical Simulations
- Process Modeling and Validation
- Experimental Design and Implementation (DOE)
- Project Management
- Front-End Web Development
- Client Liaison

Softwares and Packages

- SOLIDWORKS
 - PTC Creo Parametric and Simulate
 - Autodesk Simulation CFD
 - BECKHOFF TwinCAT 3 (PLC and HMI)
 - MATLAB
 - HTML, CSS, JS
 - Python
 - Flutter/Dart
 - 3D Printing Slicer Softwares
 - MS Office (including Visio & Project)
 - Adobe Softwares (InDesign, Illustrator)
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Journal Papers and Academic Experience

- During my time in academia (postgraduate), I was published in three journal papers and three conference papers relating to advanced manufacturing.
 - I worked as a lecturer for a year while completing my Master's degree and for six of the months, I worked as primary lecturer and course convener.
 - For full details of my academic experience and journal history, please visit my self coded portfolio website's curriculum vitae page: <https://quino97.github.io/contact.html>
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Hobbies and Interests

Software Development

- Intermediate Python & Dart/Flutter
- Front-End Web Development using HTML, CSS & JS

Exercise

- UCT Football Team & 5-a-side football
- Avid long distance runner

3D Printing

- I enjoy printing gadgets, mechanical components and self made designs using both FDM and Resin printers

Languages

- English (Native)
- Afrikaans (Limited Working Proficiency)