

VICTOR ADU

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EDUCATION

BSc.(Eng.) Mechanical and Mechatronics Engineering

2019 - 2023

University of Cape Town, Cape Town, South Africa

Final Grade: First Class Honors

Final Report: Effect of Cooling Rate from Homogenisation Temperature on AA6XXX Alloys During High-temperature Compression Testing

Highlighted Coursework: Fundamentals Of Control; Mechatronic Systems; Computer Methods, Mechanics of Machines, Thermofluids, Embedded Systems

Skills: MATLAB, Python, C, CAD modelling, Data Analysis

RESEARCH INTERESTS

Controls — Robotics — Data Analytics

AWARDS

- Dean's Merit List (2019,2021,2022) - awarded in recognition of consistent academic excellence.
- Class Medal (2022) - Top performing student in Mechanics of Machines.
- Golden Key International Honour Society Member (2020 - Present) - Placing in the top 15 percent of Faculty
- UCT Plus Gold award (2020) - awarded in recognition of work in an elected leadership role
- Faculty of Engineering Scholarship (2020) - First year Scholarship based on academic merit
- Class Medal (2019) - Top performing student in a first-year physics course

PROJECTS

Battery-Operated Pipe Bending Tool, MEC4124W Design Project *March 2023 - July 2023*

- Collaborated in a team of 4 for the MEC4124W Design Project, creating a battery-operated pipe bending tool for the University of Cape Town's Engineering Product Design course.
- Addressed user requirements outlined in a comprehensive User Requirement Specification (URS), encompassing aspects like design, functionality, and cost considerations.
- Executed the Detail Design phase using CAD modeling, performed engineering calculations, developed a Bill of Materials (BOM), and created a product development plan with cost estimates.

Multi-Camera Inertia Frame Localization System, University of Cape Town *June 2023 - July 2023*

- Worked on a project involving the development of a multi-camera system to accurately determine the inertia frame location of an object using MATLAB and MicroPython on OpenMV H7 cameras.
- Programmed cameras to detect green blobs and send pixel coordinates in real-time using MicroPython in the OpenMV IDE.
- Designed a triangulation algorithm to fuse information from multiple cameras, aiming to accurately determine the object's inertia frame location, while identifying areas for improvement in extrinsic parameter estimation methodologies.

RESEARCH EXPERIENCE

Undergraduate Research Project, University of Cape Town

July 2023 - November 2023

- Conducted microstructural analysis on AA6XXX series material post-homogenization, focusing on variations resulting from different cooling rates.
- Analyzed data from a series of high-temperature uniaxial compression tests on samples subjected to varying cooling rates from the homogenization temperature.
- Investigated the precipitation of Mg and Si in β and β' phases and its impact on material deformation resistance.

TEACHING EXPERIENCE

Mechanical Design Tutor, University of Cape Town

July 2023 - October 2023

- Conducted tutorial sessions for MEC2048S, a 2nd year Mechanical Design course, assisting students with course material and answering questions and marking scripts.
- Supporting students in their understanding of design principles and implementation techniques.

PRACTICAL EXPERIENCE

Junior Project Manager, ConveyAll - Cape Town

November 2023 - Present

- Involved in the construction and installation of a 7km conveyor system for a Truworths warehouse
- Working as the Health and Safety Representative for Conveyall, identifying potential risks and hazards on site and putting measures in place to mitigate those risks

Intern Engineer, Alu-Cab - Cape Town

November 2022 - December 2022

- Worked in the cutting and CNC factory creating 2D models of extrusions using Vcarve Pro software.
- Designed cargo rails to enhance the functionality of tents/canopies and optimise load distribution.
- Improved efficiency of the machining process by modifying G-code for the CNC router, ensuring precise machining results.

EXTRA-CURRICULAR ACTIVITIES

Orientation Leader, University Of Cape Town - Cape Town

January 2022 – February 2022

- Served as a guide to international students by aiding them in their arrival on campus
- Acquainted new students with campus services, activities, facilities, and campus rules and regulations.
- Assisted with the organization, preparation, implementation, and evaluation of new student orientation programs

External Relations manager, Engineers without Borders(UCT)

October 2021 – September 2022

- As the external relations manager for Engineers Without Borders UCT (EWB UCT), together in a team of 5, coordinated and sought sponsorships for events and projects, and built sustainable relationships between EWB-UCT and other organisations within and outside the university.

REFEREES

Dr. Arnold Pretorius

Senior Lecturer

University of Cape Town

Email: arnold.pretorius@uct.ac.za

Dr. Reuben Govender

Deputy HOD and Senior Lecturer

University of Cape Town

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