Dineth Ramida Ilapperuma

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Research Interests

I am interested in computational fluid dynamics (CFD) and fluid mechanics in biological applications. My goal is not about helping individuals, but populations by developing the next generation of medical devices. Previously, I worked on a novel treatment of intracranial aneurysms using CFD to enhance the accuracy of current treatment methods.

Education

The University of Manchester Manchester, UK
B.Eng in Mechanical Engineering, Grade: 81.5% *Sep 2022 – Jun 2025*
Thesis: Treatment of Intracranial Aneurysms using CFD *Mentor: A. Keshmiri*

Research Experience

A Novel Treatment of Intracranial Aneurysms *2024*
The Hyperloop Manchester: Complete Decompression Chamber System *2023*

Professional Experience

NAFFCO Dubai, UAE
Research and Design Engineer *Jun 2024 – Aug 2024*
– Designed and fabricated automated test bed setup, for remote and automatic testing of fire pumps to NFPA and UL/FM standards.

Hyperloop Manchester Manchester, UK
Full-scale Engineer *Sep 2022 – Jun 2024*
– Researched medical effects of high-speed travel and validated CFD simulations using STAR-CCM+
– Competed at EHW 2024 in Zurich with research submission *"Complete Decompression Chamber System"*

Achievements & Funding

– Recipient of Outstanding Scheme Awards for "FSE Peer Mentoring" & "Mechanical Engineering PASS" at Peer Support Awards
– Recipient of Stellify award from The University of Manchester
– Ranked 3rd in IMechE Design Challenge 2022
– Ranked top student in MECH12301: Tools for Engineers (97%)
– Secured £3,700 funding for "VIMA" exhibit at Sister Manchester
– Secured £2,000 for "VIMA" from Masood Entrepreneurship Centre

Projects

VIMA *2023 – Present*
Developed and fabricated a virtual white cane known as "VIMA" which acts as a Visual Impairment Motion Assistant under the mentorship of Dr. Alessandro De Rosis & Prof. Lee Margetts. Created an interpolation framework using multivariate spline interpolation, allowing for intermediate force values to be estimated for scenarios that were not explicitly simulated. Currently, through an opportunity with the Christabel Pankhurst Institute, we are looking to engage with NHS clinicians to refine the device further, ensuring it meets the practical needs of end-users.

Hydro-pede *2024*
Designed a mechanical device to aid fire hose advancements while preventing kinking to ensure stable water flow and improved efficiency of firefighting operations. The Hydro-pede was designed with the Sustainable Development Goals (SDGs) as a guiding framework, aiming to provide critical support to under-equipped firefighters and local volunteers.

Posters & Presentations

1. *Sister: VIMA*, Renold Innovation Hub, Manchester *Sep 2024 – Present*
2. *Entrepreneurship in Engineering*, The University of Manchester, ME Department *Oct 2024*
3. *Introduction to Peer Mentoring*, The University of Manchester, FSE *Sep 2024*
4. *Industrial Advisory Board Meeting*, The University of Manchester, Industrial Partners *July 2024*

Technical Skills

– **Computer-Aided Design (CAD)** SOLIDWORKS, AutoCAD, Fusion 360, GD&T, Technical Drawings
– **Programming** MATLAB, LaTeX, Python, C/C++, CNC
– **Simulation Software** Abaqus, STAR-CCM+, Ansys, Siemens Tecnomatix
– **Management** Azure DevOps, Excel, Microsoft Office
– **Soft Skills** Leadership, Problem-solving, Adaptability, Teamwork

Professional Associations

– Member of the Association for Project Management (APM) *2023 – Present*
– Member of the Institution of Mechanical Engineers (IMechE) *2022 – Present*

Additional Activities

– Co-founder and Sub-team lead of the Solar Car Society *2024 – Present*
– Student Ambassador for Faculty of Science and Engineering (FSE) *2023 – Present*
– Recruited as 'Unibuddy' for the University of Manchester *2023 – Present*
– Volunteer at VOISE *2022 – Present*
– Student Coordinator for Peer Mentoring *2023 – Present*
– Appointed Peer Mentor for the Faculty of Science and Engineering (FSE) *2023 – 2024*
– Secretary and Inclusions Officer of the Mechanical Engineering Society *2023 – 2024*
– Treasurer of the Sri Lankan Society *2023 – 2024*

References

Dr. Alessandro De Rosis - Mentor for "VIMA", Professor for Modeling and Simulation
Senior Lecturer (Virtual Engineering),Department of Mechanical, Aerospace & Civil Engineering, Faculty of Science and Engineering
George Begg Building-C38, The University of Manchester
Email: alessandro.derosis@manchester.ac.uk

Dr. Akin Atas - Academic Advisor, Professor for Design 3 & Dynamics
Lecturer (Engineering Design), Department of Mechanical, Aerospace & Civil Engineering, Faculty of Science and Engineering, The University of Manchester
Email: akin.atas@manchester.ac.uk

Prof. Dr. Lee Margetts - Mentor for "VIMA"
Discipline Head of Education for Mechanical Engineering, Department of Mechanical, Aerospace & Civil Engineering, Faculty of Science and Engineering
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