



ANGUS B. CLARK

PHD, DIC, MENG

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Walton-on-Thames, Surrey
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CERTIFICATES

- Security Clearance (SC)
2016 - 2026
- DBS (Enhanced) Checked
Jan. 2019
- SOLIDWORKS Associate
Jun. 2015
- Current and clean driving licence

ROLES

Musculoskeletal Mechanics Lab

- Lab Manager 2023 Onwards

REDS Lab

- Lab Manager 2019 - 2021

Imperial College Underwater Club

- Trip Officer 2018 - 2021
- Treasurer 2019 - 2020

Southampton University Engineering Society (SUES) Rugby

- Vice President 2015 - 2016
- President 2016 - 2017

Southampton University Ballet Society

- Treasurer 2015 - 2017

SKILLS AND INTERESTS

Foreign Languages:

Russian - Basic level

Programming Languages:

Python, C/C++, LaTeX, HTML/PHP/SQL

Software:

SolidWorks, Siemens NX, Teamcenter, Fusion360, Mathematica, MATLAB, Arduino, LabView, Unity, Adobe CC Suite, Microsoft Office, VS Code, XCode, Android Studio

ABRSM Music Qualification

- Grade 7 Piano
- Grade 8 Saxophone

Qualified SCUBA Diver

- PADI : OW, AOW, Rescue
- BSAC : DL, ADI, OWI

Stagecoach Theatre-Dance-Singing Group (2004-2012)

References available on request.

EMPLOYMENT



Research Associate (PostDoc)
Imperial College London, Department of Bioengineering
Feb. 2023 - Current

Working in the Musculoskeletal Mechanics Group under Prof. Anthony Bull, my role focuses on the research of prosthesis suspension systems for lower-limb amputees in low- and middle-income countries. Multiple novel systems were prototyped, mechanically tested in the lab, and assessed in a relevant environment through a feasibility study carried out in Cambodia. The feedback captured from patients and prosthetists was positive and the product is now close to TRL3, with a clinical trial planned for November 2024. This role involves significant ongoing involvement with clinicians and patients in both the UK (RNOH) and overseas (Cambodia, Sri Lanka, Rwanda, Tanzania). Alongside this role, I supervise multiple PhD and Masters students on a variety of prosthetics-related projects, and am responsible for the management and training of the research group laboratory.



Senior Robotics Research Engineer
Dyson Technology, Upstream Robotics
Mar. 2022 - Feb. 2023

Working as a part of a multi-disciplinary robot manipulation R&D team on a mobile home-help robot, my role specialised on the mechatronics research and development of robot arms and end-effectors. My research spanned rigid and soft robotics and involved generous development, benchmarking, and data collection on both 1st and 3rd party robot components (Kinova, UR, Panda Emika, Robotiq). I am proficient in NX with experience in mechanical design and simulation of complex assemblies, and have significant first-hand experience of electro-mechanical, pneumatic, and hydraulic actuation, along with sensors and low-volume manufacturing. I also conducted system integration and evaluation in our developed environment using VSCode and a combination of C++ and Python and am familiar with a Linux environment. A [press-release from Dyson](#) highlighting this work can be viewed on YouTube. Whilst at Dyson I was also a mentor for PhD students at the University of Cambridge.



Robotics Research Engineer
Dyson Technology, Upstream Robotics
Oct. 2021 - Mar. 2022

As part of a small team, I worked on the mechatronic R&D of novel robot grippers, specifically targeting the grasping of challenging objects met in the home. A 6-month project, this included significant first-hand design and prototyping experience and explored both mechatronic and pneumatic solutions, including the software and hardware integration of these prototypes. Pleased with my performance, I was offered a full-time position at Dyson following my internship.



Combat Systems Engineer
BMT Defence, Combat Systems Group
Jul. 2016 - Sept. 2016

I developed tools using MATLAB for analysing and optimising the placement of combat systems on warships. Working within a multi-disciplinary team, my role focused on mathematical simulation and 3D modelling, where I gained knowledge and understanding of sensors, communications, and weapons systems on surface ships and submarines in the Royal Navy. Impressed by my performance, my placement duration was extended, and I was awarded a bursary for my studies.

EDUCATION



PhD Design Engineering, DIC
Imperial College London, Dyson School of Design Engineering
2017 - 2022

Research Interests: Robotic Manipulation and Grasping, Prosthetics and Exoskeletons, Medical and Underwater Robotics

My PhD research defined a new area of robotics known as *Malleable Robots*, a low-DoF reconfigurable robot arm capable of changing its geometry to achieve a given task and involved the development of core technologies all the way through to a fully functioning robot system, requiring high-level mechatronics engineering.

During my PhD I published multiple papers (7+) in fields directly related to my PhD, as well as many others (8+) in tangential research areas, the majority of which I am first author. These can be viewed at my [Scholar profile](#), with relevant videos on my [YouTube channel](#). I have given presentations of my research at conferences such as ICRA, IROS, and RoboSoft. I also often presented my research within my department at a high level.

While at Imperial I also gained extensive teaching, supervising, and content creation experience across multiple modules and projects, and valuable management and organisational skills in research environments. I was a Graduate Teaching Assistant and Head Teaching Assistant in a variety of modules (Computing, GIZMO, and Robotics Research Projects), a Laboratory Technician and Laboratory Manager for my research group workshop, and a Student Expert for the student-run makerspace. I also directly supervised numerous undergraduate research placements (UROPs) and MEng final year projects, the majority of which also resulted in a research publication.

In 2021 I was awarded the [Robotics Forum-Amazon PhD prize for Outstanding Achievement in Robotics](#), a generous £5k monetary award.

My research has been highlighted on several occasions including:

- [IEEE Spectrum article](#)
- Best paper award at the TAROS 2020 conference
- Imperial College London News in [2018](#), [2021](#), and [2022](#)



MEng Mechanical Engineering (2:1, 68%)
University of Southampton, Department of Mechanical Engineering
2013 - 2017

- Leading an 8-person team, designed and constructed a deep-sea bio-inspired robotic research platform using coordinated fins for high-efficiency long-range propulsion
- Developed a low-cost 3D vision-based diagnostic tool for breast cancer
- Developed a unique delta-robot mechanism for a high-accuracy 3D printer
- Awarded first place for the design and programming of path-following robot

VOLUNTEER EXPERIENCE

On-call Firefighter | Surrey Fire and Rescue Service

Since May. 2023

Alongside my primary employment I work as an on-call firefighter from 7pm to 7am. In this role I regularly experience incredibly physically demanding teamwork in dangerous environments, requiring a high level of focus and resilience to enable me to make swift and accurate decisions in life-and-death situations.

Scientific Diving Volunteer | Coral Cay Conservation - Philippines Site

Jun. 2017 - Jul. 2017

I performed critical reef surveys, collecting data for analysing current and potential future marine protected areas (MPAs). I gained experience in scientific fieldwork and in working as a team in challenging environments.

STEM Ambassador | London, UK

Since Jan. 2019

I take part in outreach programmes for engaging young people in STEM subjects and have delivered multiple activities including in-person lessons, tutoring, and competitions, reaching over 500 participants so far.

HOBBIES AND INTERESTS

SCUBA Diving

I am an avid SCUBA diver with over 150 dives since 2013, with certifications under both the PADI and BSAC professional bodies. I regularly dive and take part in training with my local club and have dived in a wide variety of locations/conditions around the world. I have gained experience in managing a variety of life-saving equipment, working in complex and challenging environments, and working as part of, instructing, managing, and leading a team of divers.

Rugby

I have played rugby for multiple teams, including school, university, and my local club, which has allowed me to develop skills in teamwork, perseverance, and respect. During my time at university, I held multiple leadership roles in the committee, where I engaged in the management and training of the team.