

Brock Cooper

☎ 0487 455 477 | ✉ repooockcorb123@gmail.com | 🏠 www.brockcooper.au | 🌐 /brock-h-cooper

Personal Profile

I am a results-oriented, quality-oriented professional with a passion for mechanical and electrical design with a focus on robotics. Excellent problem solving, project management, technical and communication skills, ensuring efficient service delivery demonstrated by numerous industry roles. Excited for the opportunity to learn new skills and knowledge in a dynamic and collaborative environment.

Education

University of Wollongong (UOW)

Wollongong, NSW

BACHELOR OF MECHATRONICS ENGINEERING (HONOURS CLASS II, DIVISION 1)

Jan 2017 - Jul 2022

- **Experience with specialised electronic instrumentation and interfacing hardware:** Designed, benchmarked and determined the performance of a low cost 3D printed 6 degrees of freedom robotic arm for a Thesis. Involved data acquisition using MATLAB.

TAFE NSW

Campbelltown, NSW

STATEMENT OF ATTAINMENT (CAD DESIGN AND MANUFACTURING)

Mar 2016 - Dec 2016

Work Experience

The University of Sydney

Camperdown, NSW

TECHNICAL OFFICER - FACULTY OF MEDICINE AND HEALTH

Mar 2023 - Present

- **Manage projects/collaborate with team members, ensuring project deliverables and milestones are achieved:** Effectively managing projects by fostering collaboration among team members to achieve project deliverables and milestones. Specifically, collaborating on intricate mechanical and electrical designs with team members to ensure seamless execution and successful project outcomes.
- **Experience developing electronics, sensor interfacing, rapid prototyping and mechatronic systems:** Developed and manufactured a custom Gustometer for research purposes to allow the use of different viscosity fluids. Involving a range of sensors, pumps and fail-safe features to ensure consistent and reliable results.
- **Designing, detailing and engineering for manufacture with experience in manufacturing processes and materials:** Designed and developed mechanical and electrical systems for data acquisition of exercise equipment to assist researchers, using various manufacturing techniques such as Wire EDM, 3D Printing, CNC Machining and Fibre Metal Laser Cutting.

Austate Services

Minto, NSW

DESIGN AND MANUFACTURING ENGINEER CONTRACTOR

Dec 2021 - Mar 2023

- **Supervising, mentoring, and managing staff performance, ability to guide teams toward objectives:** Designed custom trailers for heavy transport vehicles and coordinated projects. As part of the team, I managed the manufacturing of the projects and trained staff on various workshop equipment (e.g. CNC Machines, Brake Press, Cranes). I interpreted specialised client requirements into feasible solutions, optimising internal workflows for the team, and improving performance and customer service delivery.
- **Upheld best work, health and safety practices and risk management:** Upheld safe work practices and conducted routine safety checks on general workshop equipment. Ensured equipment were properly maintained including implementing preventative maintenance measures (e.g. CNC Fibre Laser, Welders, Grinders). Promptly identified and reported potential workshop hazards.

- **Client and supplier engagement:** Effectively communicated and negotiated with clients and suppliers to establish and maintain working relationships.
- **Knowledge of Australian Standards, Codes and Regulations:** Ensured design compliance with the Road Vehicle Standards Act 2018 (RVSA). Drafted engineering drawings to AS1100.
- **Operated workshop equipment safely and effectively:** e.g. high-powered 4-axis fibre laser for cutting numerous sheet metal and tube components, TIG Welding and brake press.
- **Proficient in mechanical design/analysis, expertise in CAD/Solidworks and Software packages:** Designed complex assemblies in Solidworks, both individually and as a part of a team. Utilised Microsoft suite for project management analysis and reporting.
- **Designed, implemented, and improved processes to enhance service delivery:** Improved manufacturing efficiency through commissioning of high-powered 4-axis fibre laser cutter. Developed new manufacturing, joinery and engraving techniques. Implemented better software workflows through the use of custom scripts.

Fliight Technologies

MECHATRONICS ENGINEER

Wollongong, NSW

Jun 2021 - Sep 2022

- **Prototype development:** Designed, manufactured and assembled bespoke cable camera car. During assembly, utilised rapid manufacturing techniques (e.g. 3D printing, CNC routing, CNC laser cutting).
- **Schematic and printed circuit board (PCB) design:** Used PCB design software (e.g. KiCAD) to create circuits for power and signal management. Interpreted and developed technical documentation (e.g. datasheets, schematics, bill of materials, operating guidelines)
- **PCB assembly:** Assembled various surface mount and through hole components. Exercised precise hand soldering with a microscope. Constructed DIY reflow oven for efficient assembly of surface mount devices.
- **Interface/troubleshoot specialised electronic equipment and software:** Used various testing hardware and related software (e.g. oscilloscopes, multimeters, simulators) for troubleshooting and circuit validation.
- **Prepare, conduct and support tests of systems in the field and debug code:** Designing and developing custom drone payloads for high voltage powerlines applications with a focus on software and hardware control, including field testing and troubleshooting.

The University of Sydney (USYD)

MECHATRONICS PROJECT COLLABORATION (DRONE ON DEMAND)

Camperdown, NSW

Dec 2019 - Feb 2020

- **3D Printing:** Explored new 3D printing and manufacturing techniques of small unmanned aircraft wings using advanced materials.
- **Hardware and Software Interfacing:** Developed python interface layer to automate operation of 3D printers.

Rise Above

UNMANNED AERIAL VEHICLE (UAV) TECHNICIAN

Smeaton Grange, NSW

Feb 2019 - Jan 2020

- **Engineering:** Designed and retrofitted custom payload solutions requiring CAD, programming (C++, Python) and interfacing numerous sensors (e.g. Arduino, Servos, Rotary Encoder).
- **Customer support:** Provided technical services and support to troubleshoot software and hardware for custom UAV builds and modifications for enterprise platforms. Dealt with difficult clients requiring communication and negotiation skills.
- **Equipment operation and maintenance:** Operated, serviced and maintained various 3D printers and other manufacturing equipment.

Skope Group Comm-Klad

COMPUTER NUMERICAL CONTROL (CNC) MACHINE OPERATOR

Campbelltown, NSW

Feb 2018 - Dec 2019

- Safely and autonomously operated 3-axis, automatic 7 tool CNC machine
- Handled bulky and expensive materials
- Required teamwork, communication and time management

Certificates and Professional Development

- **2017:** Alan Broady Memorial Prize (The University of Sydney)
- **2016:** South32 Illawarra Coal Sustainability (University of Wollongong)
- **2016:** HSC Shape Exhibition (Powerhouse Museum)
- **2015:** National WHS General Construction Induction Training (White Card)

References

To be provided upon request.