

## Nathan Sivalingam

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### WORK EXPERIENCE

#### University of New South Wales

Sydney, NSW

##### *Academic Demonstrator for Mechanics of Solids 2*

Feb. 2025 - Present

- Presented worked solutions to mechanics-based problems in a classroom environment.
- Responded to technical questions from students on the course forum, which often involved analysing their attempted solution, identifying the misstep, and correcting their judgement in a tactful manner.
- Provided additional resources to students in the lead up to assessment deadlines to aid in their understanding of the course content.

##### *Academic Demonstrator for Mechanical Design 1*

Feb. 2025 - Present

- Assisted students throughout the course as they attempted to solve an open-ended mechanical-engineering related problem.
- Presented a number of open-ended engineering problems during weekly workshop demonstrations.
- Instructed students on the best way to take accurate measurements using a variety of technical instruments (calipers, micrometers, etc.).

##### *Academic Demonstrator for Engineering Design and Professional Practice*

Aug. 2024 - Dec. 2024

- Demonstrated technical skills related to engineering design, creative problem solving, project management, teamwork, and the importance of adhering to professional ethical standards in design.
- Worked with students as they designed projects to address one or more sustainable development goals outlined by the United Nations.
- Established an anonymous feedback system at the end of each workshop, enabling students to share concerns and teaching preferences, which led to the continuous improvement of teaching quality.

#### Maico Property Services

Sydney, NSW

##### *Contractor*

Dec. 2021 - Jan. 2024

- Escorted engineers to restricted construction site areas using elevated work platforms, which allowed the necessary inspections to be carried out.
- Produced clear and concise solutions to unorthodox labour intensive problems.
- Performed administrative and logistical responsibilities for multiple large-scale government construction projects.

### LICENSES & CERTIFICATIONS

#### Construction

Sydney, NSW

##### *Elevated Work Platform License*

Jun. 2022 - Jun. 2027

##### *General Construction White Card*

Dec. 2021 - Present

### EDUCATION

#### University of New South Wales

Sydney, NSW

Bachelor of Mechanical Engineering (Honours) and Bachelor of Science (Computer Science) (BE (Hons) BSc)

### PROJECT EXPERIENCE

#### Mechanical Design

Sydney, NSW

##### *Stirling Engine*

Aug 2024 - Dec 2024

- Designed, manufactured and produced an operational alpha type Stirling engine.
- Computer Aided Design (CAD) software was used to design the necessary components and create an assembly drawing of the entire engine.
- A Computer Numerical Control (CNC) drilling machine was used to manufacture the base plate and brackets required to keep the engine stationary during operation.

#### Automated Mechatronics

Sydney, NSW

##### *Hand Gesture Robot*

Dec 2023 - Jan 2024

- Created an automated vehicle capable of being controlled by intricate hand gestures up to 100 metres away.
- Led the design, manufacturing and installation of vehicle chassis cover.
- Applied technical adjustments to improve vehicle performance during the testing process.