Walt Wang

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Education

University of New South Wales, MPhil in Mechanical Engineering — Mar 2023 – Mar 2025

- Thesis title: Design and Characterisation of a Cough Simulator.
- Tuition Fee Scholarship: Tuition Fee Cover $AUD 100,900 and Stipend $AUD 35,000 annually.

National Taiwan Ocean University, BEng in Mechanical and Mechatronic — Sep 2018 – Sep 2022

- Winner of Keelung Hackathon across 50 teams, honoured by Lin Yu-chang, Mayor of Keelung.
- Excellence Research Award: Honoured by the Dean of the School of Engineering.
- Chinese Student Scholarship: Stipend $TWD 40,000 annually.

Skills

Languages: Python, Java, C#, SQL, HTML, CSS, JavaScript

Engineering tools: MATLAB, Solidworks, ANSYS, Simulink, COMSOL

Experience

Demonstrator – Thesis A & Thesis B, University of New South Wales — Mar 2023 – Dec 2023

- Mentored students and provided academic support through assignments, projects, and regular meetings.
- Guided students in experimental setup and data analysis for their thesis projects.
- Delivered tutorial sessions on research methodologies and technical writing.
- Collaborated with faculty members to enhance course materials and ensure alignment with research objectives.

Publications

Design and Characterisation of a Cough Simulator — Dec 2024

Zhou Wang, Prateek Bahl, David Treck, Raina MacIntyre, Con Doolan, Charitha de Silva

Paper No: AFMC2024-118

Projects

Cough Simulator — Mar 2023 - Mar 2025

- Designed a cough simulator that accurately replicates human coughs in flow rate and particle size distribution.
- *Key Novelty*: The first tunable cough simulator in the history, capable of replicating different cough profiles from various human subjects with accurate flow rate and particle size distribution.

Mathematical Model for Simulator and Human Coughs — Oct 2023 - Dec 2023

- Developed a mathematical model to predict the disk size and spring constant for the cough simulator, allowing replication of human cough flow rate by adjusting the disk size (lung extension) and spring constant (cough strength).
- *Key Novelty*: The first reported mathematical method that can be used to describe human coughs precisely.

Smart City Mapping System — May 2021 - Jan 2022

- Built a smart city mapping system using MEMS sensors to detect human activities and algorithms to monitor city activity.
- *Key Engagement*: Winner of Keelung Hackathon across 50 teams, honoured by Lin Yu-chang, Mayor of Keelung.