



Professional Summary

A self-motivated, multidisciplinary engineer specialising in structural & mechanical design, 3D computational modelling/simulation, and advanced computer-aided manufacturing (CAM). Skilled in delivering manufacturing-ready solutions through design-to-fabrication CAD workflows, integrating programming-driven automation to improve design accuracy, optimise material use, and streamline production. Experienced in prototyping, design for manufacture (DFM), tolerance control, and preparing detailed documentation to ensure buildable, cost-effective, and high-performance results. Capable of managing projects from concept to completion, coordinating multidisciplinary teams, and fostering strong collaboration across teams to meet technical, budget, and schedule requirements.

Core Skills & Tools

Design & Product Development	CAD Modelling (Rhino-Grasshopper, SolidWorks, AutoCAD, Revit), Bill of Materials (BOM) Creation, Fabrication-Ready Documentation (e.g., DXF, STL, IGES, SAT)
Simulation & Structural Analysis	Finite Element Analysis (Abaqus, SPACE GASS, Karamba3D), Design Calculation, Mechanics of Materials
Prototyping & Digital Fabrication	CNC Routing, Laser & Waterjet Cutting, 3D Printing (FDM/SLA), CAM Workflows, Tolerance Analysis, Material Optimisation, Waste Reduction
Automation & Scripting	Python, MATLAB, Parametric Modelling, Task Automation, LaTeX, MS Office Suite
Collaboration & Project Leadership	Project Management, Cross-functional Teamwork, Creative & Strategic Problem Solving, Process Improvement, Client & Team Coordination

Relevant Experience

Research Fellow (B6) – R&D Structural & Mechanical Design Jul 2020 – Sep 2025

RMIT University | Bundoora, VIC, Australia

- Led 30+ R&D projects on deployable, freeform, and lightweight structures from concept to prototype installation.
- Designed components using parametric 3D CAD and FEA; fabricated via CNC, laser cutting, and additive manufacturing; validated through physical testing to optimise performance, efficiency, and manufacturability.
- Developed automation tools and parametric workflows with multidisciplinary teams, streamlining design processes and accelerating production readiness.
- Produced high-impact technical documentation for industry and research audiences, and supervised PhD students in delivering pioneering engineering solutions.

Computational Designer (Self-Employed) – Digital Design & Engineering Solutions Jan 2020 – Nov 2022

Jeff Lee Digital Projects | ABN: 82 514 572 803

- Delivered parametric CAD solutions to optimise manufacturing workflows for architectural and structural projects.
- Developed custom 3D digital tools for automated structural profile selection, flashing/cladding detailing, cut-and-fill analysis, plumbing layouts, modular wall systems, and more.
- Developed parametric definitions to model highly complex geometries that are impractical with explicit CAD, enabling precise shape control and rapid design adjustments.
- Collaborated with architects, engineers, and fabricators to ensure digital designs aligned with production constraints.

Estimator – Cost Estimation & Project Coordination Aug 2015 – Jan 2016

Colemans Fencing | Bethania, QLD, Australia

- Prepared accurate material take-offs and cost estimates (quotes) from CAD drawings and site inspections.
- Collaborated with clients to clarify requirements and propose cost-effective design/material alternatives.
- Obtained supplier pricing, confirmed availability, and coordinated delivery schedules to meet project timelines.
- Supported site operations by planning workforce deployment to align labour availability with project demands.

Site Engineer (Intern) – Construction Supervision & Quality Control Nov 2014 – Feb 2015

Dong-Teng Construction Group | Taipei, Taiwan

- Assisted with site planning, logistics, and coordination to ensure smooth progress on a high-rise building project.
- Performed on-site inspections to verify construction compliance with approved drawings and quality standards.
- Liaised with trades, engineers, and project managers to resolve technical and scheduling issues.
- Monitored daily progress and maintained records for reporting and compliance.

Education

Doctor of Engineering (Joint PhD) | Civil/Mechanical Engineering
The University of Queensland & Tianjin University

Mar 2016 – May 2019

Bachelor of Engineering | Civil Engineering
The University of Queensland, Australia

Feb 2011 – Jul 2015

Awards & Recognition

- **2024 – International Media Spotlight for Deployable Structures**
Deployable designs featured in *Forbes*, *Wired*, and *Interesting Engineering*, recognised globally for innovation in lightweight, flat-pack building systems.
- **2023 – Organiser, IASS 2023 Melbourne Symposium**
Directed planning and delivery of a premier global structural design event at Melbourne Convention and Exhibition Centre, attracting 300+ professionals worldwide.
- **2021 – Hangai Prize Winner (Surrey, UK)**
First Australian recipient in the award's 19-year history, recognised globally for pioneering research in shell and spatial structures. Awarded annually to only four outstanding young researchers under 30.
- **2020 – Designer of the HappyShield PPE**
Developed an innovative PPE solution during COVID-19, achieving product certification and widespread adoption, with media features in *Dezeen* and *ArchDaily*.
- **2018 – Gabriella & Paul Rosenbaum Foundation Travel Award, 7OSME (Oxford, UK)**
One of only 10 students worldwide selected for excellence in origami-based engineering design at the quadrennial *Origami Science, Mathematics, and Education* (OSME) Conference.
- **2018 – The Patricia Moffett Bursary, Golden Jubilee Student Award (UQ Alumni & Friends)**
One of only 50 recipients across the entire university, awarded for exceptional service to the School of Civil Engineering, including laboratory innovation and advanced technical support to faculty and students.
- **2016 – UQ Dow Centre Student Challenge Award**
Second Prize (Early Concept Grants) for a flat-packable shelter concept — rapidly deployable without tools or skills, featuring an innovative two-layer folding geometry.
- **Since 2016 – Advanced Rhino-Grasshopper Trainer**
Delivered specialist parametric modelling workshops to undergraduate and postgraduate students across multiple universities, building practical, industry-ready skills.

References available upon request.