# Daniel Wilkinson

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## Professional Summary

Environmental Engineer with a rare combination of expertise in Life Cycle Assessment (LCA), process automation, and innovation management. Highly skilled in leveraging Python, R, and LCA software to drive sustainability-focused engineering solutions. Proven ability to optimize industrial processes through advanced eco-design methodologies and techno-economic analysis. Recognized for leading innovation culture, technology scouting, and IP management. Strong experience in pre-FEED and FEED studies, feasibility assessments, and report writing, aligning with Australia's infrastructure and energy sector needs. Currently refining expertise in OpenLCA and Brightway, positioning as a sought-after specialist in the Australian market.

## Key Skills

- Pre-FEED & FEED Studies: Feasibility studies, process flow modeling, engineering design  
- Programming Languages: Python (Advanced), R (Advanced), SQL (Intermediate)  
- LCA & Sustainability Software: OpenLCA, Umberto 11, Brightway, SimaPro, ecoinvent  
- Process Engineering: BFDs, PFDs, P&IDs, eco-design for carbon-negative technologies  
- Techno-Economic Analysis & Lifecycle Costing: Economic feasibility, risk assessment, cost-benefit analysis  
- GIS & Spatial Analysis: ArcMap, QGIS (essential for environmental planning and policy in Australia)  
- Technical Writing & IP: Patent applications, feasibility reports, regulatory compliance  
- Leadership & Innovation: Building innovation culture, technology scouting, high-impact IP strategy  
- Languages: English (Native), German (Fluent), French (Intermediate)

## Professional Experience

\*\*Research and Development Engineer – Direct Air Capture\*\*   
\*\*DACMa GmbH — Hamburg, Germany (August 2023 – Present)\*\*   
- Developing LCA models with OpenLCA, Umberto, and Brightway of DACCUS projects, integrating process diagrams to optimize energy and material flows for DAC commercialisation.  
- Leading pre-FEED and FEED studies, covering LCA, noise emissions, and equipment selection in collaboration with colleagues on mass flow balances.  
- Leading patent workshops, developing training materials, and creating software for automated search term generation and logging. Conducted reviews of European, Australian, and South American compliance and voluntary carbon markets to inform the company's business model.  
  
\*\*Research Associate – Industrial Ecology & Operations Research\*\*   
\*\*Karlsruhe Institute of Technology (KIT) — Karlsruhe, Germany (August 2022 – July 2023)\*\*   
- Developed cradle-to-cradle LCA models, supporting Australia's push toward circular economy and sustainability standards.  
- Conducted techno-economic analysis to optimize recycling networks and sustainable materials management.  
- Utilized Python-based multi-objective optimization to design efficient and sustainable recycling systems.  
  
\*\*Research Associate – Carbon Dioxide Removal Technology\*\*   
\*\*Fraunhofer Institute for Solar Energy Systems — Freiburg, Germany (April 2021 – November 2022)\*\*   
- Pioneered LCA models for CO2 capture technologies, enabling decision-making for carbon-neutral industry transitions.  
- Conducted techno-economic feasibility studies for scalable carbon-negative solutions, directly applicable to Australia's net-zero goals.  
- Developing a Python-based cost estimation tool for DAC plant scaling, with future applications in LCCA and economic feasibility.  
  
\*\*Legal & Compliance Experience\*\*   
\*\*Lawyer – Database Project\*\*   
\*\*Xerox Legal Business Services — London, UK (June 2015 – August 2016)\*\*   
- Managed compliance framework for banking disputes, demonstrating expertise in risk analysis and regulatory compliance relevant to Australian engineering projects.  
  
\*\*Paralegal/Lawyer – Medical Negligence Litigation\*\*   
\*\*Self-Employed — Adelaide, Australia (November 2011 – May 2015)\*\*   
- Advised on regulatory compliance and case management, reinforcing ability to navigate complex environmental regulations.

## Education

\*\*Master of Environmental Engineering\*\*   
\*\*Weihenstephan-Triesdorf University of Applied Sciences — Germany (April 2020 – September 2021)\*\*   
- High Distinction (1.6 GPA)  
- \*\*Thesis:\*\* Life Cycle Assessment of a Direct Air Capture Concept (Grade: 1.5)  
- Coursework included species identification, nutrient analysis (biochemistry lab), and GIS-based spatial distribution mapping.  
- Conducted a feasibility study on integrating enhanced weathering into an HVAC system for carbon capture applications.  
  
\*\*Bachelor of Science – Environmental and Resource Management\*\*   
\*\*Brandenburg University of Technology Cottbus-Senftenberg — Germany (September 2016 – July 2019)\*\*   
- High Distinction (1.6 GPA)  
- \*\*Thesis:\*\* Microplastics in Soils: Toxicity, Translation, and Fate (Grade: 1.0)  
- Integrated LCA with GIS analysis, developing a strong cross-disciplinary approach to environmental challenges.  
  
\*\*LLB (Honours) / Bachelor of Arts (French)\*\*   
\*\*The University of Adelaide — Australia (February 2007 – November 2012)\*\*

## Professional Development

- Pursuing Engineers Australia accreditation (CPEng or NER) to enhance professional recognition in Australia.  
- Life Cycle Innovation Conference 2024, Berlin  
- Python 3 Certification, Codecademy  
- Data Science Track (Ongoing), Codecademy  
- Umberto 11 LCA Software Training, iPoint-Solutions

## Additional Information

- \*\*Citizenship:\*\* Australia, United Kingdom, German permanent residency  
- \*\*Languages:\*\* English (Native), German (Fluent), French (Intermediate)  
- \*\*Volunteer Work:\*\* Lifeguard and paramedic with German Red Cross (2024 – present)  
- \*\*Driver’s License:\*\* German (converted from Australian B-class)