

LUCAS BARBOSA

ENGINEERING (HONOURS) AND COMPUTER SCIENCE

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ABOUT ME

A bright future can be built with infinite software, energy and labour. These resources are constrained by maths, physics and economics yet can become abundant by engineering at the edge. This is my life's mission. Ideas are my own maybelucas.com/posts.

WORK EXPERIENCE

Research Lead

PwC

Sydney Jan 2024 – present

- **Developed a novel method for guaranteeing trust in online content**, leading a cross-functional team of academics and engineers to culminate in a research publication.
- **Authored an arXiv whitepaper** synthesizing technical concepts developed with engineers and academics, and directed UI/UX development of the prototype.

Tech Lead

PwC

Sydney Jun 2023 – Jan 2024

- **Launched a wage-remediation and analysis product**, driving ideation, engineering planning, user interviews, and full product lifecycle to replace static dashboards with a workflow-builder UX.
- **Managed stakeholder communications**, coordinating pilot users, domain experts, and cross-functional teams to align requirements and deliverables.
- **Reduced remediation turnaround times by 10%** through developing and integrating automated analysis methods.

Software Engineer

PwC

Sydney May 2022 – present

- **Developed the Smart Audit Platform**, a web-based real-time collaboration platform built on 40+ microservices and AI models, served across 13 APAC and US markets on the back of a 5k msg/s RabbitMQ cluster.
- **Cut frontend memory usage by 70%**, leading Solid/React and Node v8 memory optimisation workshops to support 100+ page PDFs on low-resource browsers.
- **Engineered a graph-search purge microservice**, archiving 1 TB every month with 99% reliability to maintain Postgres performance under peak loads.
- **Boosted dev productivity 5×** by introducing a modern multi-language monorepo toolchain and hosting technical workshops for faster adoption.
- **Promoted to Senior Consultant** whilst in undergrad in recognition of delivering high-impact solutions under tight timelines.

Software Engineer

Progue

Sydney 2021 – 2022

- **Parsed XML to NoSQL**, developing a web platform that converted thousands of Word files into a structured data model.
- **Built search and merge services**, creating a vector-based text-search API and ReactJS docx-merging tool to accelerate accounting workflows 3×
- **Managed K8s deployments**, overseeing full release cycles for scalable, high-availability cloud delivery.

Software Engineer Intern

Cercle

Sydney 2021 – 2022

- Built a real-time QR scanner, engineering an AWS-hosted platform to process hundreds of cup scans daily and log gamification metrics.
- Conducted user testing, running in-person and online sessions to refine features based on feedback.
- Ideated product iterations, collaborating in a startup environment on future feature concepts.

Founding Engineer

Lattice

Sydney 2016 – 2022

- **Founded software firm**, delivering bespoke productivity solutions to private clients.
- **Scaled PHP codebases**, implementing PSR-12 standards and caching to cut page loads 40%.

PUBLICATIONS

Toward Trustworthy Content: The Role of Challengers, Juries and Veracity Bonds in Digital Media Platforms – L. Barbosa, S. Kirshner, R. Kopel, E. Lim, and T. Pagram. *Industrial Management & Data Systems*, manuscript IMDS-11-2024-1177.R2 (accepted).

EDUCATION

University of New South Wales

- Pursuing B Eng (Honours) and Computer Science
- Honours student under Prof. Will Midgley developing advanced robotic learning algorithms
- Researcher in advanced shielding materials for nuclear fusion reactors
- Achieved a mark of 99/100 in Data Structures and Algorithms
- Winner of [UNIHack '24](#) and [Technion Yom Ha'Atzmaut '25](#)

Oakhill College

- ATAR: 96.80¹
- House captain
- Provincial's Excellence Award
- Founder of XYZ Mathematics club
- NCSS Summer School '18
- UNSW HS1917 '17
- UNSW ProgComp High Distinction '17

TECHNICAL SKILLS

Languages	C/C++, Rust, Python, JavaScript, SQL, PHP, Java, Assembly
Machine Learning	PyTorch, XGBoost, JAX, RL, CNNs, LLMs, VLMs, VLAs
Control Systems	PID, Kalman Filters, LTI Systems, MATLAB, SolidWorks, ROS, Embedded
Web Stack	React, Solid, Astro, Nest, GCP, Azure, AWS, Postgres, Mongo, K8s

¹The ATAR (Australian Tertiary Admission Rank) is a percentile score from 0.00 to 99.95 that ranks high-school graduates for admission to Australian universities.