Ethan Rich-Usher

Mechanical engineer, product development and mechanical design

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Brisbane, Queensland

Mechanical engineer who turns field problems into working hardware, from concept to production. Experience across mining, power generation and rail, plus my own product business that sold more than 1,000 units. Strong in CAD, FEA, design for manufacture, rapid prototyping and root cause analysis. Seeking a product development or mechanical design role in Brisbane.

Experience

2026 – now
Graduate Engineer, Energy Projects
Axiom Project Services, for Newmont

ISO 50001 energy management system: built the FEED schedule, wrote the business requirements and UAT scripts, and ran a data validation that caught fuel volumes reading low.

2024 – 2026
CAPEX Project Controls Engineer
Axiom Project Services

Project controls for capital works at Harmony's Hidden Valley gold mine: budgets, funding applications, schedules, cash flows and forecasts, reported to executives. Led the daily coordination meeting.

2023 – 2024
Junior Divisional Service Field Engineer, APAC
Cummins Power Generation

Diagnosed generator faults across Asia Pacific with FMEA and 8D. Traced a start-up surge to controller and bracket resonance; designed a stiffening bracket and reprogramming cable for the field fix, and drove a factory settings change.

2021 – 2022
Honours thesis: wheel roundness measuring device
Queensland Rail, rolling stock engineering

Designed, built and field-tested a rail-mounted tool that records a wheel's full roundness profile to find flat spots. Covered CAD, FEA plate sizing, electronics and microcontroller code, BOMs, waterjet and lathe fabrication, and two field test days. Cut measurement to about 7 minutes per wheel for one person.

2020 – 2021
Undergraduate Design and Maintenance Engineer
Glencore, Rolleston open cut coal mine

Redesigned the drill cabin falling object guard for two blast-hole drills to AS ISO 3449, using CAD and FEA to verify impact performance while improving operator visibility; delivered drawings to an RPEQ contractor for certification. Wrote maintenance strategies for the fuel farm and in-pit tanks to AS 1940.

Own business and design work

2022 – 2025
Founder, DSLR film scanning equipment
Designed, manufactured and sold a modular film scanning system: camera stand, light panel and carriers for five film formats. Ran production on my own print farm, managed suppliers and sold more than 1,000 units through Shopify and Etsy.

2022 – 2025
Design and prototyping, with F3 Industrial Design
Designed, prototyped and tested mechanical systems and enclosures for client products, delivering DFM and DFA improvements through CAD, additive and subtractive manufacturing and functional prototypes.

Education

UQ
Bachelor of Engineering (Honours), Mechanical
The University of Queensland

Skills

CAD and simulation
SolidWorks, Fusion 360, Inventor, Creo, AutoCAD, Ansys FEA, Autodesk CAM, KiCad

Manufacturing
FDM and SLA printing, CNC mill, router and lathe, laser and waterjet cutting, sheet metal and brake press, jigs and fixtures

Methods and code
DFM and DFA, FMEA, 8D, Lean Six Sigma, tolerance stack-ups, Python, C++, VBA, SAP, MS Project

Case studies, 3D models and test data at ethanrichusher.com. Phone number available on request.