

Senior Software Engineer

Senior software engineer with 5+ years of experience building backend and platform capabilities for optimisation and planning software. I specialise in domain modelling, internal DSL and expression system design, performance optimisation, and integration test architecture, with a track record of turning complex technical problems into reliable, scalable product capabilities. I work across architecture, implementation, rollout, and iteration, and have led initiatives that improved runtime performance, strengthened regression coverage, and enabled reuse across multiple products.

Work Experience

Senior Software Engineer

Deswik, Software

Jan 2021 - Present

- Promoted from Graduate Software Engineer to Software Engineer and then Senior Software Engineer while contributing across optimisation and surface planning products.
- Designed and delivered a reusable expression-language platform for optimisation and planning workflows, replacing fragile legacy implementations with a structured pipeline for parsing, analysis, compilation, type inference, linting, and diagnostics.
- Built editor capabilities around the expression system, including syntax highlighting, autocomplete, formatting, tooltips, and localisation support, improving usability for engineers authoring production expressions.
- Led end-to-end delivery of the expression platform across architecture, implementation, rollout, support, and iteration, establishing a reusable internal capability rather than a one-off feature.
- Drove adoption of the platform across multiple products through API design, documentation, and technical guidance, enabling broader reuse of core workflow logic.
- Designed and implemented integrations that enabled cost- and constraint-aware destination scheduling, helping deliver a key capability for end-to-end mine planning workflows.
- Optimised parcel-flow calculations over large multidimensional datasets by modelling dependencies as a graph, parallelising evaluation, and caching analysis results, reducing a representative client workflow from almost 2 hours to 11 seconds.
- Designed and introduced an integration testing framework and synthetic model generator that increased meaningful integration test coverage from fewer than 20 tests to more than 890, significantly improving regression protection across the product.
- Mentored 5+ engineers, led multi-engineer technical initiatives, and influenced architecture and engineering standards through design guidance and technical direction.

Sessional Academic

Queensland University of Technology, Faculties of Science and Engineering

Feb 2018 - Jul 2022

- Designed, delivered, and marked assessments, tutorials, workshops, and lectures across first- to third-year engineering, mathematics, and computing subjects.
- Supported student learning through structured teaching and facilitation, helping translate complex technical concepts into clear and practical instruction.
- Units taught included
 - EGB111: Foundation of Engineering Design
 - MXB100: Introductory Calculus and Algebra
 - MXB101: Probability and Stochastic Modelling
 - MZB125: Introductory Engineering Mathematics
 - MZB126: Engineering Computation
 - CAB201: Programming Principles
 - CAB202: Microprocessors and Digital Systems
 - CAB302: Software Development

Learning Host Team Lead

Queensland University of Technology, Student Success Group

Feb 2018 - Jul 2019

- Led regular team briefings to communicate process changes, align colleagues, and facilitate constructive discussion.
- Trained and supported new and existing team members, and reported team progress, concerns, and operational needs to supervisors.

Learning Host

Queensland University of Technology, Student Success Group

Jul 2018 - Nov 2018

- Provided front-line administrative support for students, helping them navigate university processes and access the services they needed.
- Coordinated support pathways for students requiring more complex assistance, ensuring issues were triaged and escalated appropriately.

Barista

McDonald's, McCafé

Dec 2015 - Dec 2017

- Delivered consistent customer service in a fast-paced hospitality environment, balancing speed, quality, and attention to detail.
- Built strong teamwork and communication skills through close coordination with colleagues in a high-volume service setting.

Private Tutor

Self Employed

Jan 2013 - Nov 2015

- Provided one-on-one academic support and feedback to secondary students across English, Mathematics, and Japanese.
 - Built strong communication and coaching skills through personalised support for homework, assessment preparation, and ongoing learning.
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Education

Bachelor of Mathematics and Bachelor of Engineering (Honours)

Queensland University of Technology

Feb 2015 - Nov 2021

- Majors in Applied and Computational Mathematics, and Computer and Software Engineering
- Honours thesis topic: Exploring Parallel Periodic Distance Transform Algorithms
- Grade point average of 6.3

Queensland Certificate of Education

Hills International College

Jan 2013 - Dec 2014

- College captain and dux
 - Overall position (OP): 2 (ATAR 98.0)
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Volunteering

Student Executive and Training Facilitator

Queensland University of Technology, STIMulate

Feb 2018 - May 2019

- Prepared and delivered formal training for new peer learning facilitators, supporting consistent onboarding and capability development.
- Maintained clear communication channels between peer facilitators and university staff, helping ensure issues and feedback were surfaced effectively.
- Collaborated with executive team members to organise training sessions, team-building activities, and community events.

Peer Learning Facilitator

Queensland University of Technology, STIMulate

Feb 2016 - May 2019

- Supported Mathematics, IT, and Engineering students through peer-assisted learning sessions focused on problem solving and academic confidence.
 - Helped foster collaborative learning environments where students could engage with difficult material in a supportive and structured way.
 - Assisted in coaching and supporting fellow facilitators in delivering effective student learning experiences.
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Technical Focus

Languages: C#, Rust, TypeScript, SQL, PowerShell, Bash

Platforms/Frameworks: ASP.NET, React, WinForms

Data/Storage: PostgreSQL, SQLite, Parquet

DevOps/Tooling: Git, Azure DevOps, Bitbucket, Jenkins, Jira

Specialties: Domain modelling, internal DSL design, integration testing, performance optimisation

Languages

English

Native

Japanese

Limited Working Proficiency