Andrea Agosti – ITASCA Australia

Title	**Senior Geotechnical Engineer**
Expertise	Geotechnical engineer with strong numerical modelling capability and practical open-pit mining experience. Skilled in analysing complex geomechanical problems, assessing operational geotechnical risk, and integrating monitoring data into robust engineering decisions. Experienced in open-pit/underground interaction analysis, conducting 2D and 3D numerical simulations, building geotechnical block models, and supporting both feasibility-level studies and operational hazard management. Complemented by software-development experience—coding, validating, and publishing new geotechnical modelling tools—along with strong abilities in data automation, technical communication, and cross-functional collaboration.
Education	PhD (Geotechnical Engineering), 2023 Newcastle University, Newcastle Upon Tyne, England, United Kingdom MSc (Civil Engineering For Risk Mitigation), 2018 Polytechnic University of Milan, Milan, Lombardy, Italy BSc (Civil Engineering), 2016 Polytechnic University of Milan, Milan, Lombardy, Italy
Professional Affiliations	AusIMM (member)

Professional Experience

Jan 2026 – Current	ITASCA Australia Pty Ltd, Brisbane, QLD (AU) Senior Geotechnical Engineer
Jul 2023 – Dec 2025	Glencore McArthur River Mine, Mining Technical Services, NT (AU) Geotechnical Engineer
Dec 2021 – Jul 2023	AMC Consultants, Brisbane, QLD (AU) Geotechnical Engineer
Aug 2021– Dec 2025	OptimalSlope Ltd, London (UK) Co-founder & CTO

Project Experience

Numerical Analysis for Open-Pit and Underground Interaction: Performed advanced 2D and 3D numerical modelling to assess open-pit slope stability and underground void hazards at the McArthur River Mine (NT, Australia). Developed analytical frameworks to evaluate the impact of nearby underground excavations on slope performance and operational safety. Collaborated with operational teams to integrate monitoring data into model calibration and risk-management decisions.

Underground Mine Design and Numerical Modelling: Completed stope and pillar design for the Coitezeira underground mine (Ferbasa), incorporating geomechanical constraints into mine layout and extraction sequencing. Conducted 3D numerical modelling of development through paste backfill at the Jabal Sayid

Mine (MBCC), providing recommendations to ensure excavation stability. At RED5's Darlot Mine, built RS3 models to quantify geotechnical risk and support operational planning.

Geotechnical Model Development and Data Integration: Constructed detailed geotechnical block models in Leapfrog for Glencore's major cobalt operation, integrating geological, structural, and geotechnical datasets to support PFS/FS-level analysis. Automated components of the geotechnical assessment workflow using Python, improving consistency and turnaround times for routine analyses at both consulting and operational sites.

Surface and Subsurface Monitoring Interpretation: Managed maintenance and interpretation of geotechnical monitoring systems—including prisms, radar, and subsurface instrumentation—at McArthur River Mine (NT). Translated monitoring trends into actionable operational guidance, contributing to hazard identification, trigger-level refinement, and day-to-day geotechnical risk management.

Geotechnical Software Development and Validation: Ideated, developed, and validated OptimalSlope, a novel 2D geotechnical modelling software tool designed to streamline slope analysis workflows. Produced publications demonstrating potential NPV improvements and reduced CO_2 emissions through optimized slope designs. Assessed integration pathways for incorporating OptimalSlope as an add-in module for commercial mining software packages.