



THE UNIVERSITY  
of ADELAIDE



University of  
South Australia



Curtin University

## PhD Scholarships

# AUSTRALIAN RESEARCH COUNCIL TRAINING CENTRE FOR INTEGRATED OPERATIONS FOR COMPLEX RESOURCES

Generous PhD scholarships in engineering, computer science, data analytics and mathematical modelling to deliver the tools for integrating the mining value chain.

Join the **Australian Research Council Training Centre for Integrated Operations for Complex Resources** and help deliver the vital enabling tools – advanced sensors, data analytics and Artificial Intelligence – for automated, integrated and optimised mining.

All PhD projects include an industry placement and offer a unique opportunity to work on industry-linked interdisciplinary projects with leading researchers and mining industry partners.

### Available projects span the complete mining and processing production chain

- Cross-borehole seismic interferometry to interpolate rock mass and geometallurgical variables (Curtin University)
- Draw-point and cave operation and fragmentation sensing (University of Adelaide)

- Gold sensing (University of Adelaide)
- Wireless sensor network radio frequency identification for continuously deployable tagging (University of Adelaide)
- Vibration and accelerometer sensing for early stage roping detection in hydrocyclones (University of Adelaide)
- Pulp Chemistry Monitor for leach applications (UniSA)
- Integration and analytics of drill sensor information to derive geometallurgical attributes (University of Adelaide)
- Fingerprinting ore types and blends by fusing hyper-spectral and other sensors using assisted machine learning (UniSA)
- Ore tracking model from uncertain resource model to belt sensors and run-of-mine stockpiles (University of Adelaide)
- Integration of sensors to maximise crushing plant throughput (University of Adelaide)
- Integration of grinding circuit sensors including ultrasonics for particle size distribution to maximise mill throughput (University of Adelaide)
- Integration and analytics of pulp chemistry sensor information with in-stream analysis for flotation plant optimisation (UniSA)
- Integration of in-stream and particle size measurements using ultrasonics in flotation (UniSA)
- Rapid updating of resource knowledge with sensor information including structures (University of Adelaide)

- Measure and monitor particle size distributions so as to divert low value waste (University of Adelaide)
- Machine Learning to link resource to down-stream products (University of Adelaide)

We invite qualified Australian domestic and international students with an excellent master/honours degree in mining engineering, mechanical engineering, computer science, mathematics, statistics or related areas to submit an Expression of Interest via email now, with the view to start from mid-2020 onwards. Successful applicants will receive an indicative tax-free stipend of \$34,013 per annum as set by the ARC for three years as well as generous project operating funds. No tuition fees apply.

*The ARC Training Centre for Integrated Operations for Complex Resources is funded by the Australian Government through the Australian Research Council with additional support from numerous industry partners.*

## FOR FURTHER ENQUIRIES

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