

Sandy Spiers - Profile Section

PHD Research - Sandy has a background in optimisation, both in application and theory. He is well versed in the building and application of mathematical models that replicate scheduling decisions, both in the deterministic case and when uncertainties should be included. These models often pose computationally intensive challenges and hence require well developed solution algorithms. Sandy plans to focus his theoretical work on building solution algorithms for discrete programs, a class of optimisation problem that is common in industry.

Industry research - areas of interest:

- Mathematical optimisation and modelling, especially discrete and stochastic optimisation
- How to model the maintenance scheduling of complicated, network-connected assets effectively and accurately

Sandy is skilled programmer, with experience in Python, R, MATLAB and Gams. He completed his Honours Thesis with the Centre; Sandy's research Thesis is Maintenance Optimisation for Network-Connected Assets

Sandy will complete his PhD with Professor Ryan Loxton and Dr Hoa Bui at Curtin University. He will be focusing on research associated with Theme 3 - Support the Manager.

PHD Research - Maintenance Optimisation for Network Connected Assets

Sandy is focussing his research on optimising maintenance strategies for network connected assets. Sandy will build a maintenance optimisation model for a critical path asset where redundancy maintenance strategies are common.

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His initial focus will be on Digester banks; a connected network of assets used in production and subject to several scheduling complexities. While his research will look at a specific fleet of digester banks, many of the key contributions are transferrable to other assets and systems in the resources industry.

His outcomes will apply to any asset systems that use redundant assets to mitigate risks and where hard scheduling constraints govern maintenance activities

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