

Delivering efficiencies in health care and manufacturing

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This talk considers what to do when confronted with failures with current data or analysis. What can we do ...

when current predictions for rare events are poor?

Instead of focusing on rare event classification, for example, suicide prediction, we focus on identifying the riskiest events with minimal error. Such events are likely precursors to outliers of interest. We demonstrate our results through outlier detection in surveillance (leading to our start-up company iCetana, Australia) and in suicide risk prediction (implemented in in Barwon Health, Geelong, Australia). We discuss the challenges in data modeling, pitfalls and our outcomes.

when data has special characteristics?

We predict cancer toxicity risk, and show how we leverage the special characteristics of the data to build better predictive models. We share our insights we have learnt in our path from such data to models.

when data is limited?

We use Bayesian optimization based methods to demonstrate how to accelerate the experimental process, the foundation of both product and process design. We show how we have been able to impact the discovery of novel materials and alloys.