

# Machine learning for sparse and noisy data

Gareth Conduit

Theory of Condensed Matter group

# Machine learning algorithm to

## Sparse data



Couple real-life data,  
computer simulations,  
and rules of thumb

## Iterative



Fewer trial and  
improvement cycles  
required

## Siloed data



How can all sources of  
information be brought  
together

# Machine learning algorithm to

## Sparse data



Couple real-life data,  
computer simulations,  
and rules of thumb

## Iterative



Fewer trial and  
improvement cycles  
required

## Siloed data

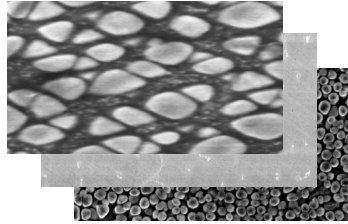


How can all sources of  
information be brought  
together

**Generic** with **proven** applications in materials discovery and drug design (9 peer reviewed papers and 5 patents)

# Materials designed

Nickel and molybdenum



Concrete mixtures



Batteries



# Applications to other domains

Drug design



Battery management system



Predicting the state of charge and health of batteries using data-driven machine learning

Autonomous vehicles and 5G

