

# Data science in predictive maintenance

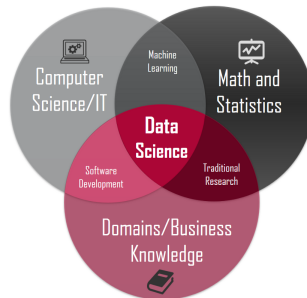
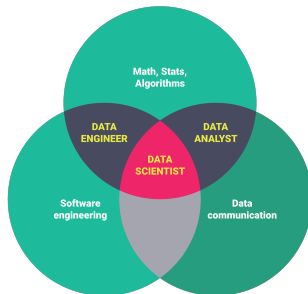
## An optimization problem

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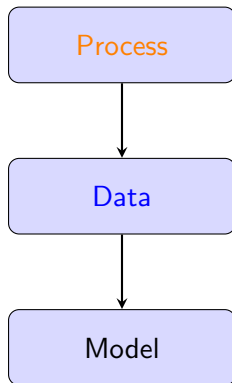
# Data science is a multidisciplinary field



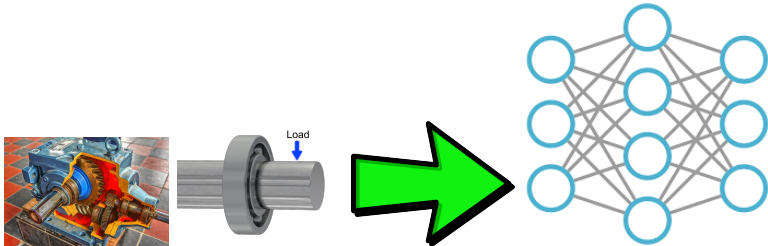
# Data science optimizes processes



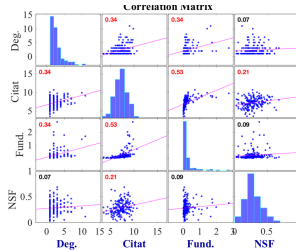
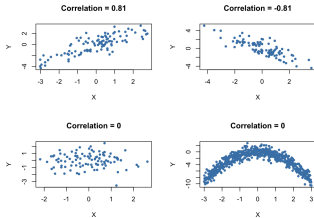
# Data science methodology



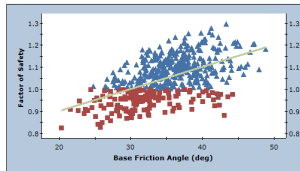
# Data science methodology: Process conceptual model



# Data science methodology: Data quality and understanding

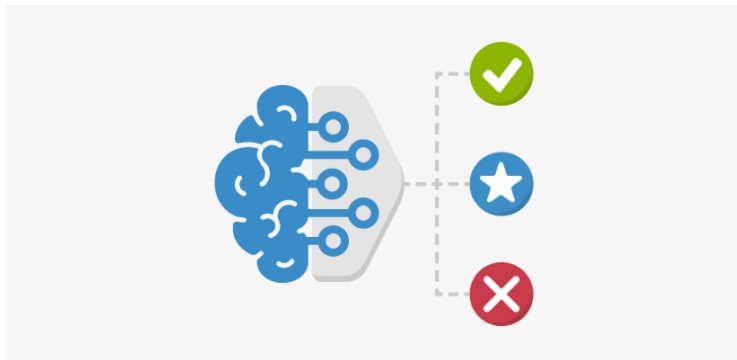


Highlighted Data = Factor of Safety < 1 (146 points)



Probability of Failure: 0.292  
Correlation Coefficient: 0.543947 alpha = 0.703155 beta = 0.00997436 (Valid Data)

# Data science methodology: Model



- 1 Defect diagnosis
- 2 Asset remaining useful life estimation

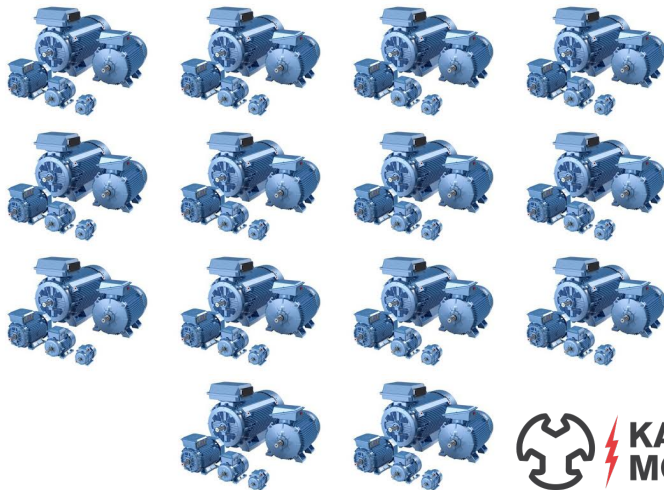
# Data science for maintenance optimization



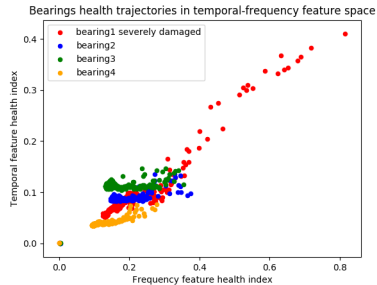
- Part ordering
- Maintenance planing
- Production optimization
- Process optimization
-



# Data science in predictive maintenance: Analytics at scale



# Data science in predictive maintenance: Machine health index



# Data science in predictive maintenance: Pattern recognition

