

Data science in predictive maintenance

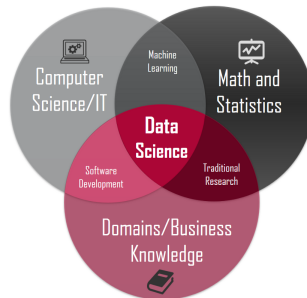
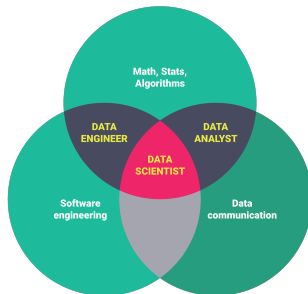
An optimization problem

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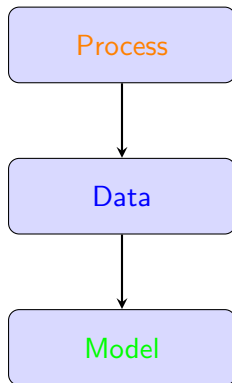
Data science is a multidisciplinary field



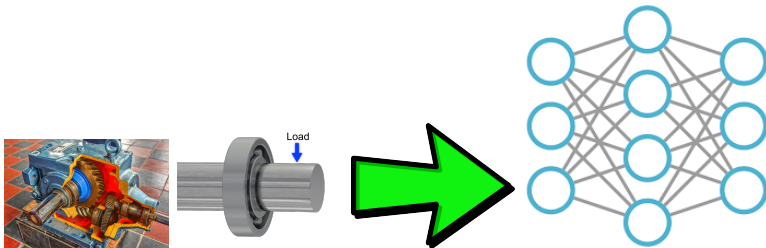
Data science optimizes processes



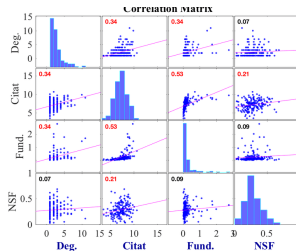
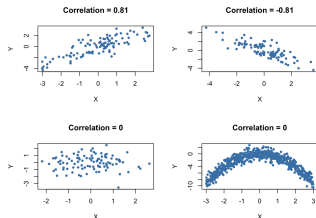
Data science methodology



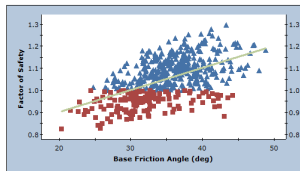
Data science methodology: Process conceptual model



Data science methodology: Data quality and understanding

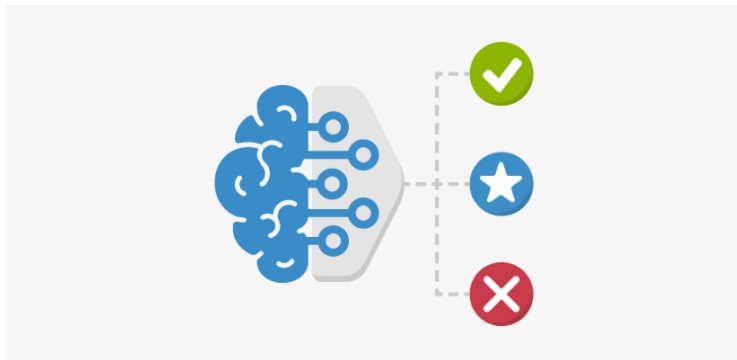


Highlighted Data = Factor of Safety < 1 (146 points)



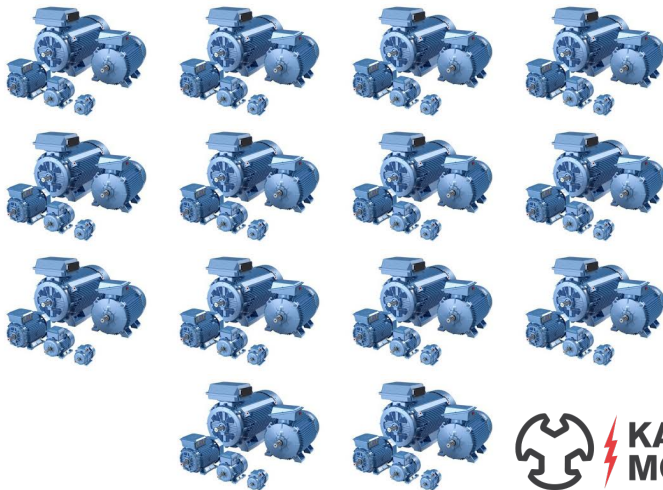
Probability of Failure: 0.292
Correlation Coefficient: 0.543947 alpha = 0.703155 beta = 0.00997436 (Valid Data)

Data science methodology: Model



- 1 Defect diagnosis
- 2 Asset remaining useful life estimation

Data science in methodology: Analytics at scale

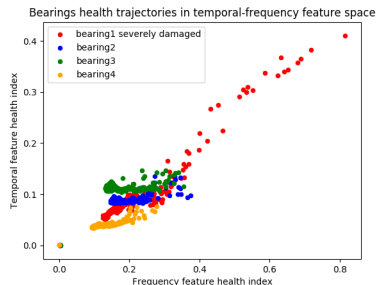


Data science for maintenance optimization



- Part ordering
- Maintenance planing
- Production optimization
- Process optimization
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Data science in predictive maintenance: Machine health index



Data science in predictive maintenance: Pattern recognition

