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# Pattern Recognition for Data Science

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Photo by Stefan Els

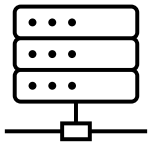
# Presentation Outline

## Overview

In a world where technology is increasingly becoming more accessible and markets highly saturated, **how do we advance**?

By investing in Data Science and leveraging the insights that it can provide, operational optimization and **meaningful solutions** can be realized.

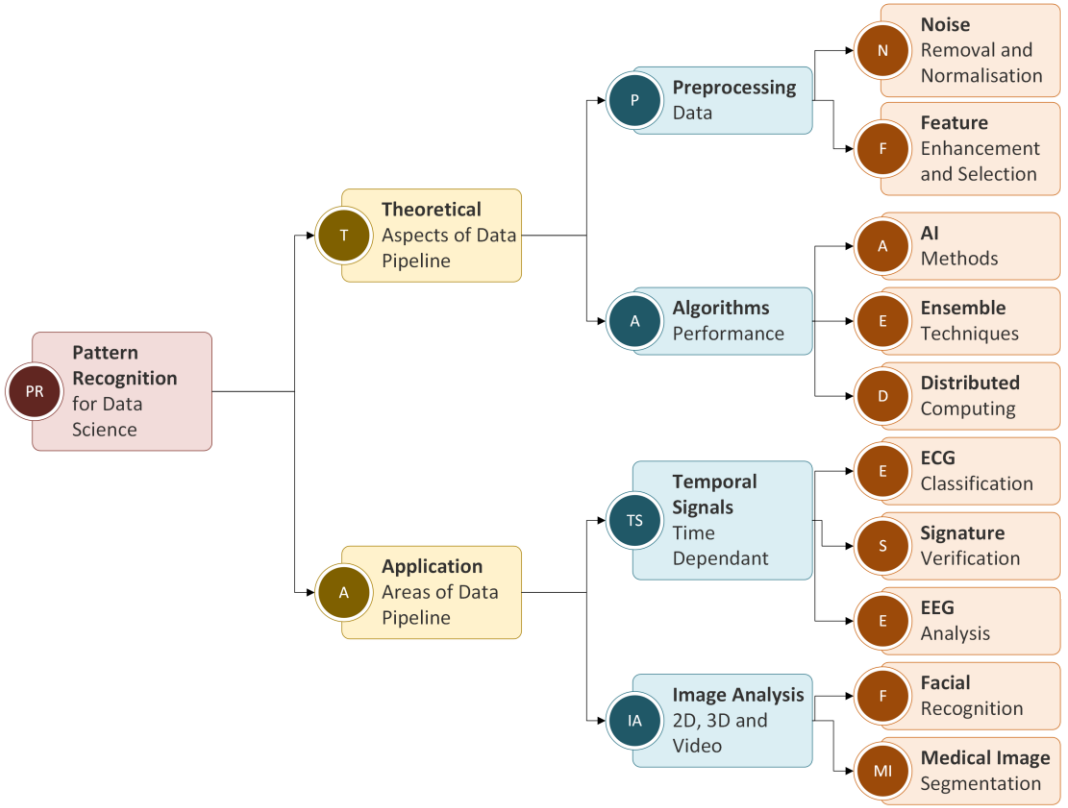
This talk highlights the importance of improving Data Science tools and strategically using its principles to **add value**.

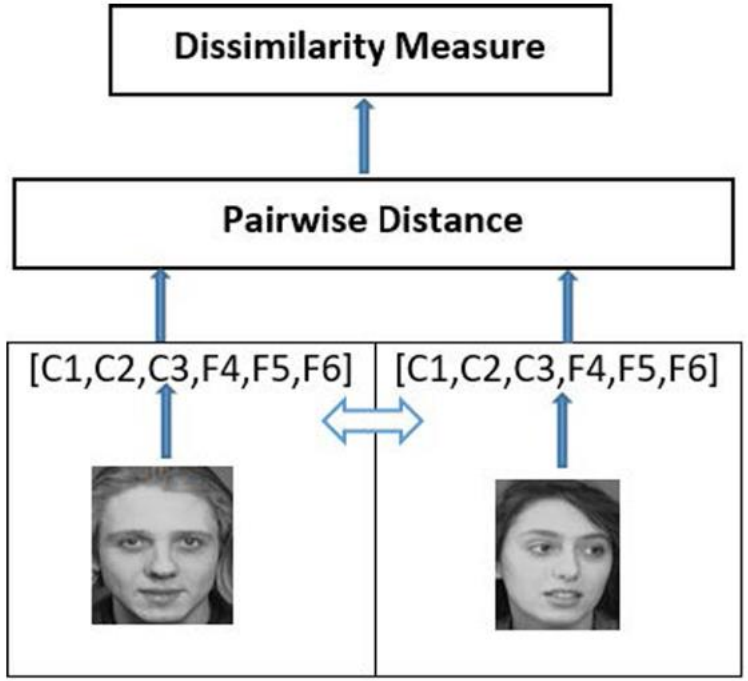
- Who am I?
- Why should we all care about Data Science? 
- How can we work together?

# Introduction

- Education - Computer Science
- Value - Continuous Learning
- Goal - Data Science and Project Management Niche

Focus Area: **Efficient** and **Effective** Process **Monitoring** using **Pattern Recognition**

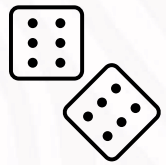



Makurumure, L.T. and Gwetu, M., 2021

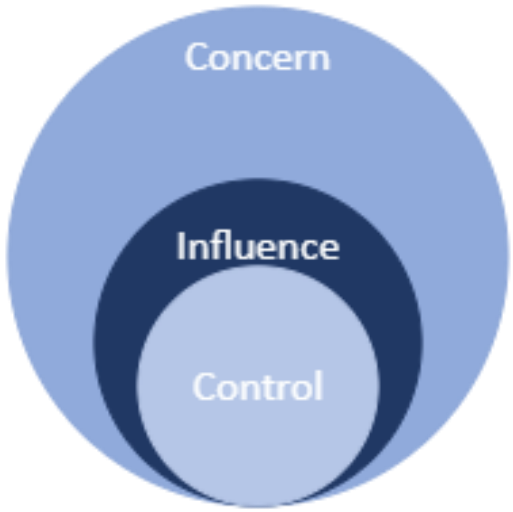
# How Do Events Happen?

- Stochastic vs Deterministic perspective

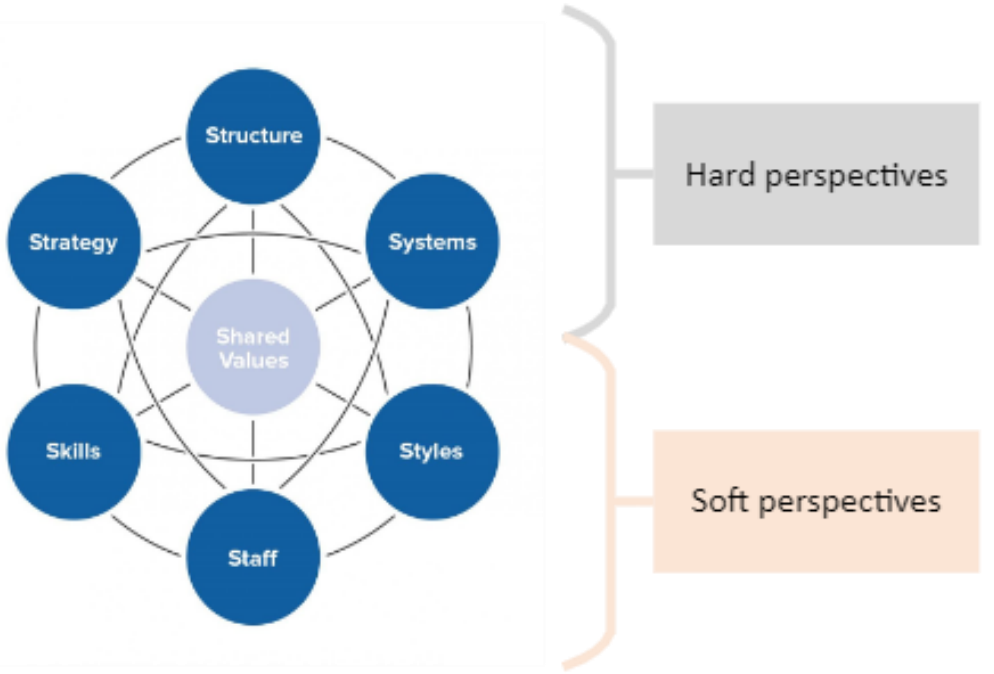


- Intentional vs Passive perspective

- Plan to leverage patterns



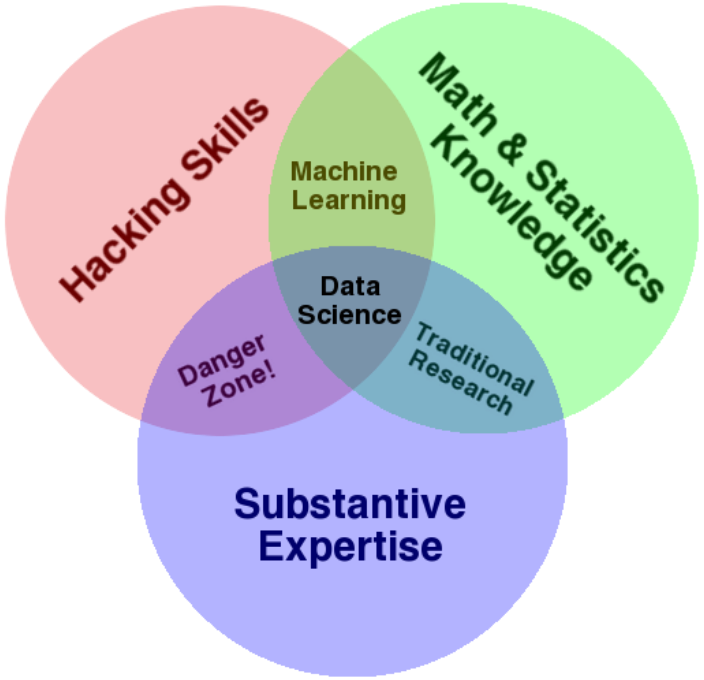

Covey Circles of Concern



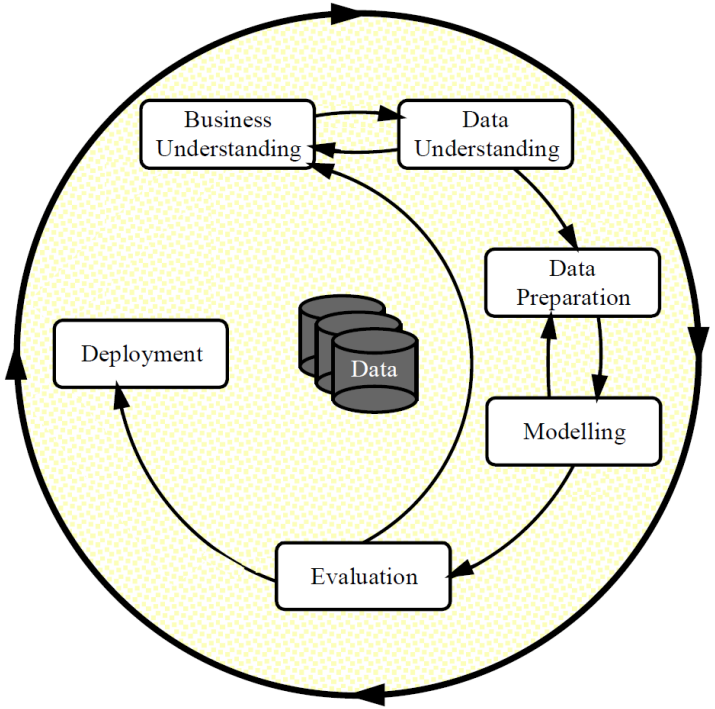

McKinsey 7S

# What is Data Science?

- It is interdisciplinary
- It has theoretical aspects
- It aims to solve big data problems
- It needs to be a strategy




Drew Conway Venn Diagram




Wirth, R. and Hipp, J., 2000

# How Can Data Science Be Used?

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- Descriptive — What does our customer base look like?
- Diagnostic — What caused or is associated with a drop in sales?
- Predictive — What is typical employee productivity on a July Monday?
- Prescriptive — Given our context, which investment option is best?
- Generative — How should we arrange our shop floor to maximize sales?

# Industrial Engineering Data Science Collaboration Opportunities

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- Final Year Projects
- Research Assignment Projects
- Postgraduate Programs
- Short Courses
- Research Consultancy

https://ie-datascience.sun.ac.za

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Thank you
Enkosi
Dankie
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Photo by Stefan Els