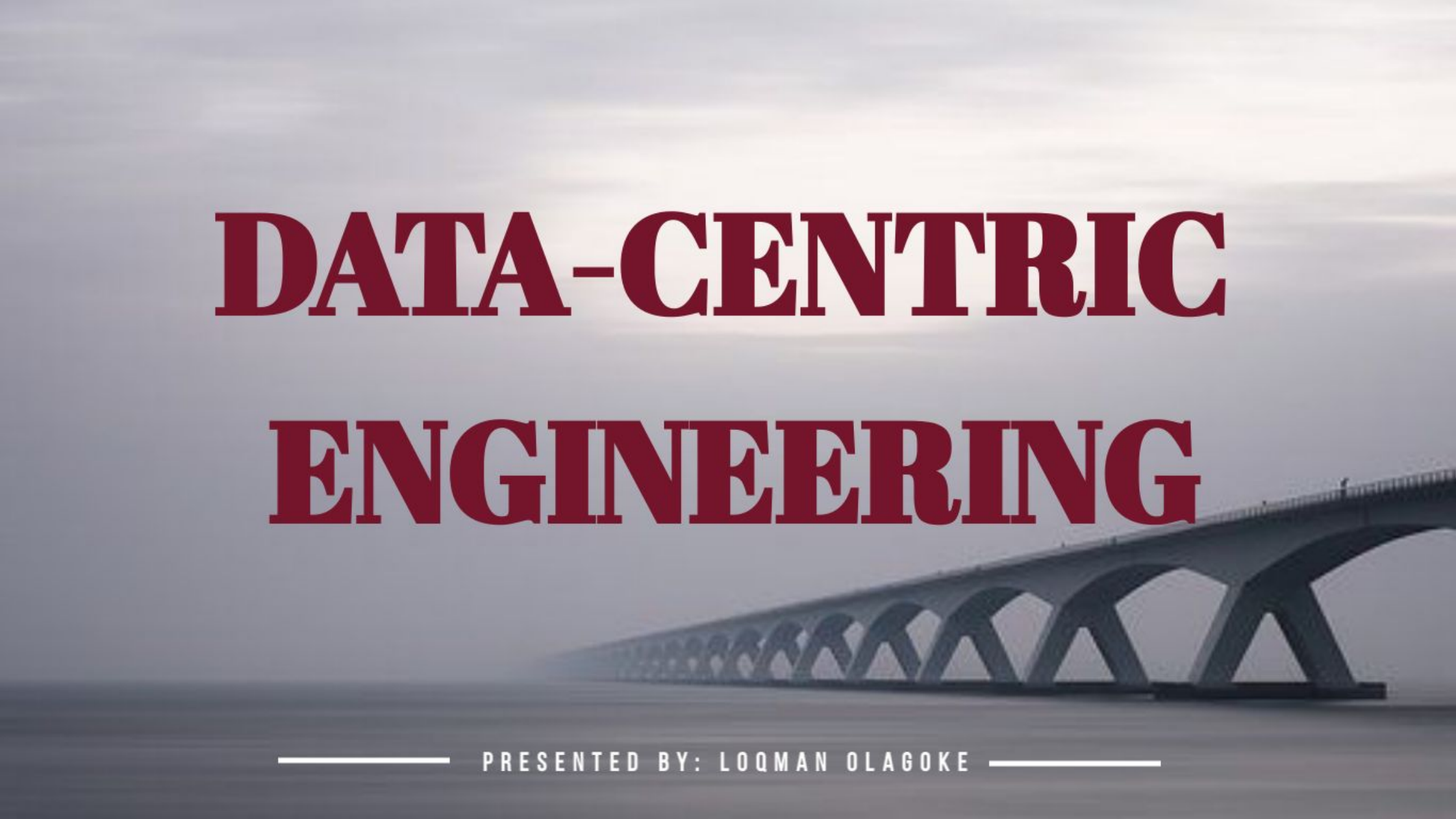
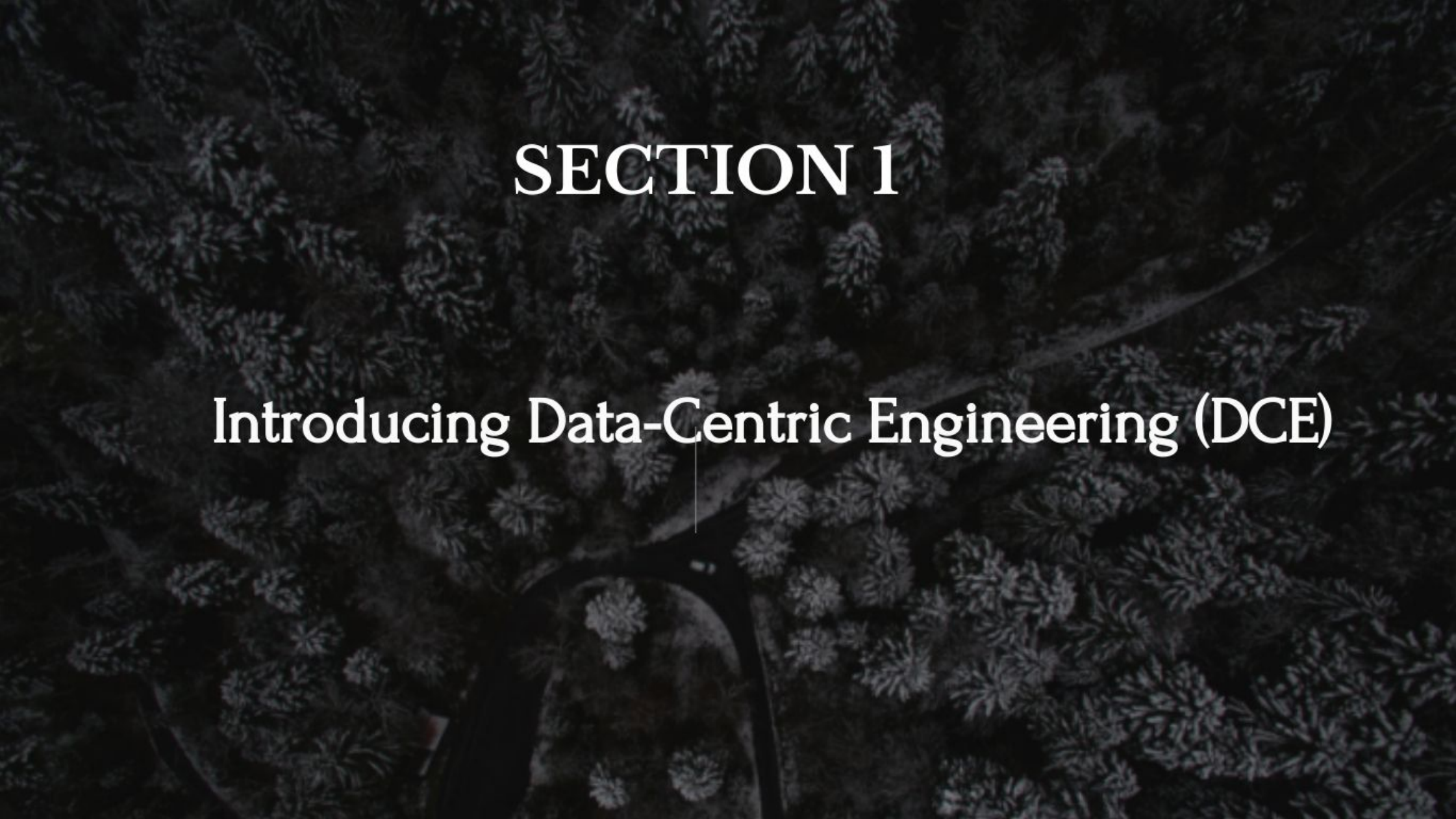


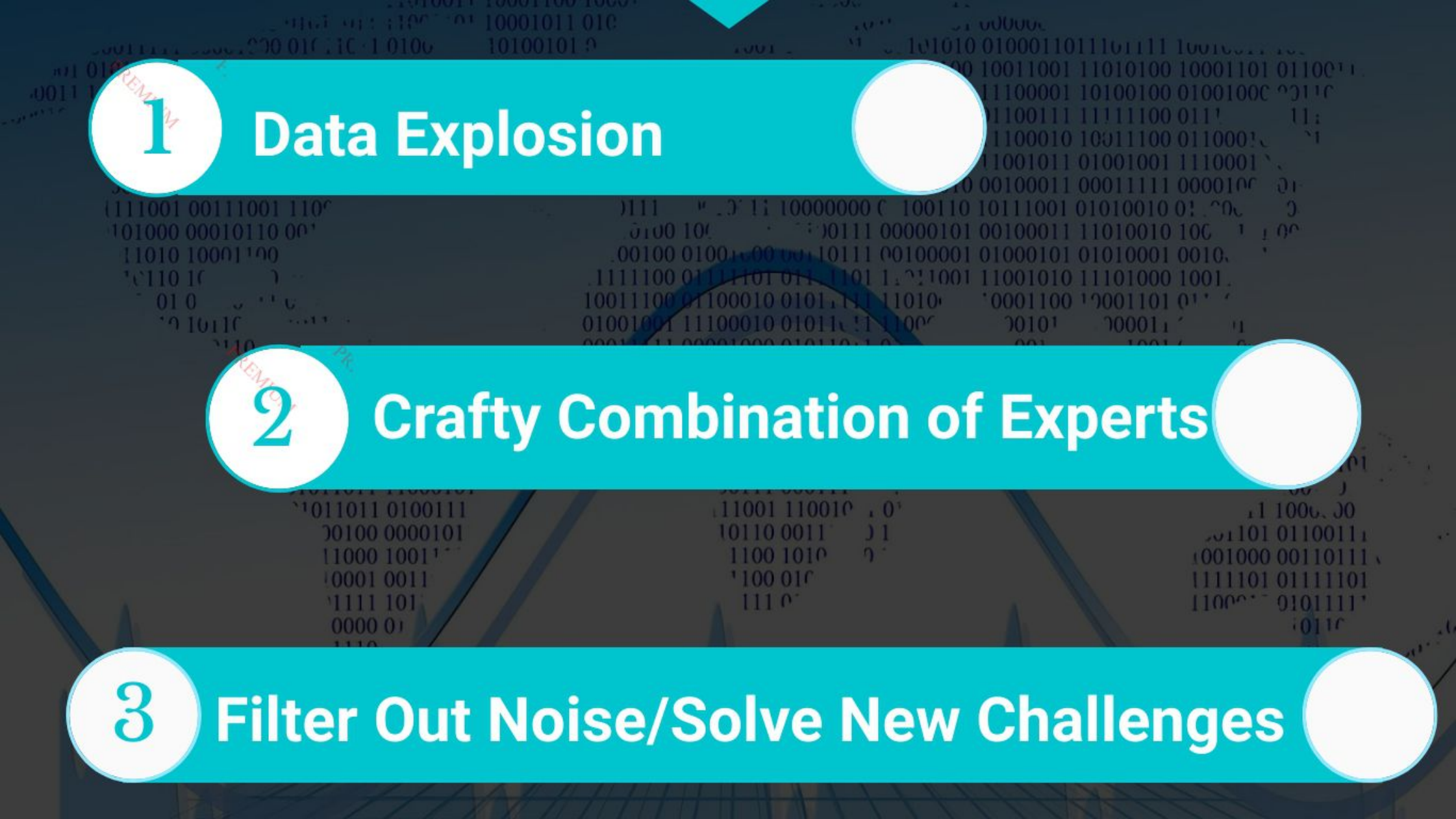
DATA-CENTRIC ENGINEERING

PRESENTED BY: LOQMAN OLAGOKE

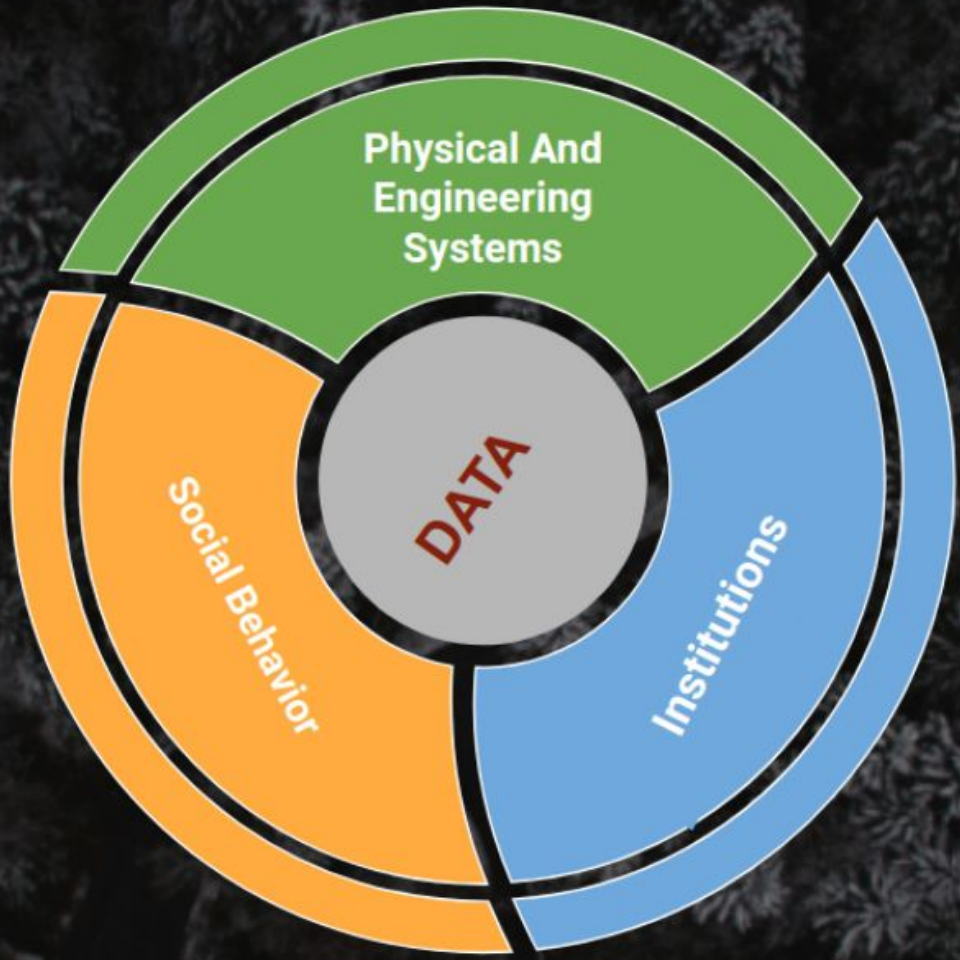


SECTION 1

Introducing Data-Centric Engineering (DCE)


1
Data Explosion
2
Crafty Combination of Experts
3
Filter Out Noise/Solve New Challenges

The New Nexus



THE NEW SYNTHESIS

1. Engineering
2. Statistics
3. Social Science
4. Mathematics
5. Big Data
6. Machine Learning

THE FOCUS

Problems in Engineering

Adapt Solutions to Underlying Situations

Augment Predictive models with data

Build Resilient Systems

Any Difference ?

Data driven models already exist (Then why Data-Centric Engineering?)

Difference: Where data enters system/model building and design

Data : An integral part of system/model building

SECTION 2

Data Centric Engineering Workgroup
(D-ACE Workgroup)

AIM

DCE for impacting sustainable development in Africa

D-ACE APPROACH

community-led group-based projects

Interdisciplinary/Multi-region student team

Factor resource constraints into the solutions space (that is, adapt models and solutions to the realities of the environment)

Project based approach to human capacity development.

Work at the intersection of theory and practical applications.

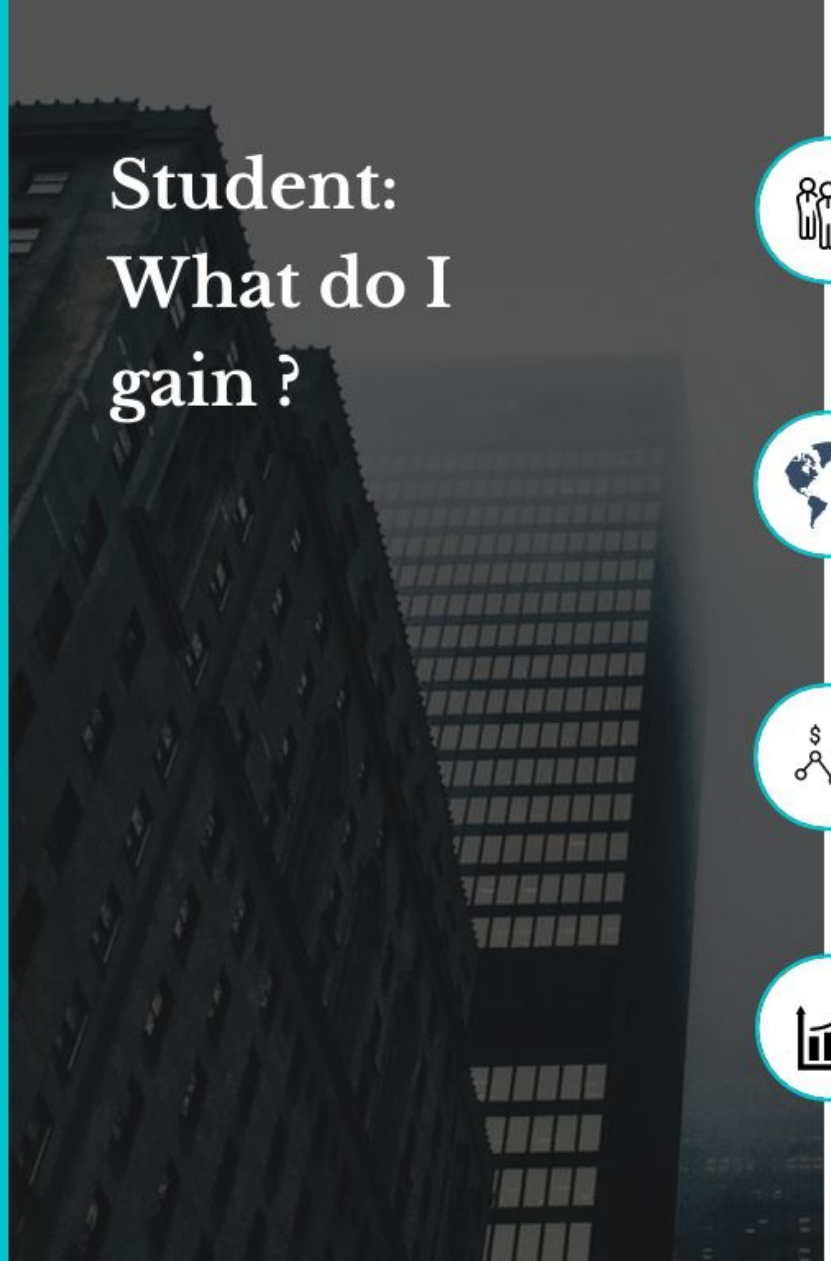
How does it work ?

Community propose relevant projects

Interdisciplinary student team subscribe to project

Enlist experienced engineer to guide team

Track project progress



Student: What do I gain ?

- **Learn to be Team Player**
- **Work on real world problems (with DCE)**
- **Student can push ideas to the business world**
- **Boost Human Resource Capacity**

Salient Points

Bridging engineering, big data, machine learning, statistics for solving engineering problems and building resilient models

Data-Centric Engineering

Community-led multi-group project platform aimed at using DCE methods for sustainable development and human capacity building in Africa

D-ACE Workgroup

" in order to understand things like power outages and bank failures, you still need electrical engineers and economists — but today you also need anthropologists and data scientists, too. Our ability to collect and aggregate data is already well beyond our ability to understand what it could tell us — and no single discipline, on its own, holds the keys to solving this problem ."

Prof. Munther Dahleh (MIT)

References

Data-Centric Engineering in modern science from perspective of a statistician, an engineer, and a software developer (Christophe Ley et al)

The role of statistics in data-centric engineering (F. Din-Houn et al)

The Cambridge Data-Centric Engineering Journal Launch Presentations (Youtube)

Join the team

And let's begin building the future together !