

INTRODUCTORY AI/ML IN PYTHON

Homay Valafar

Director of the AI Institute

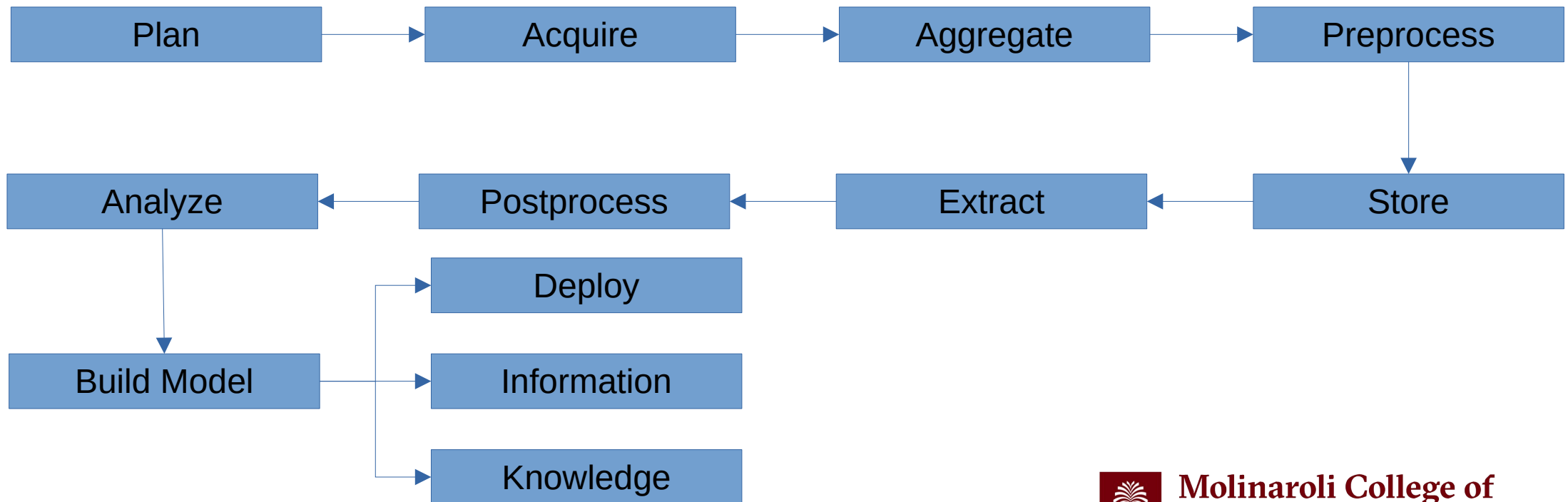
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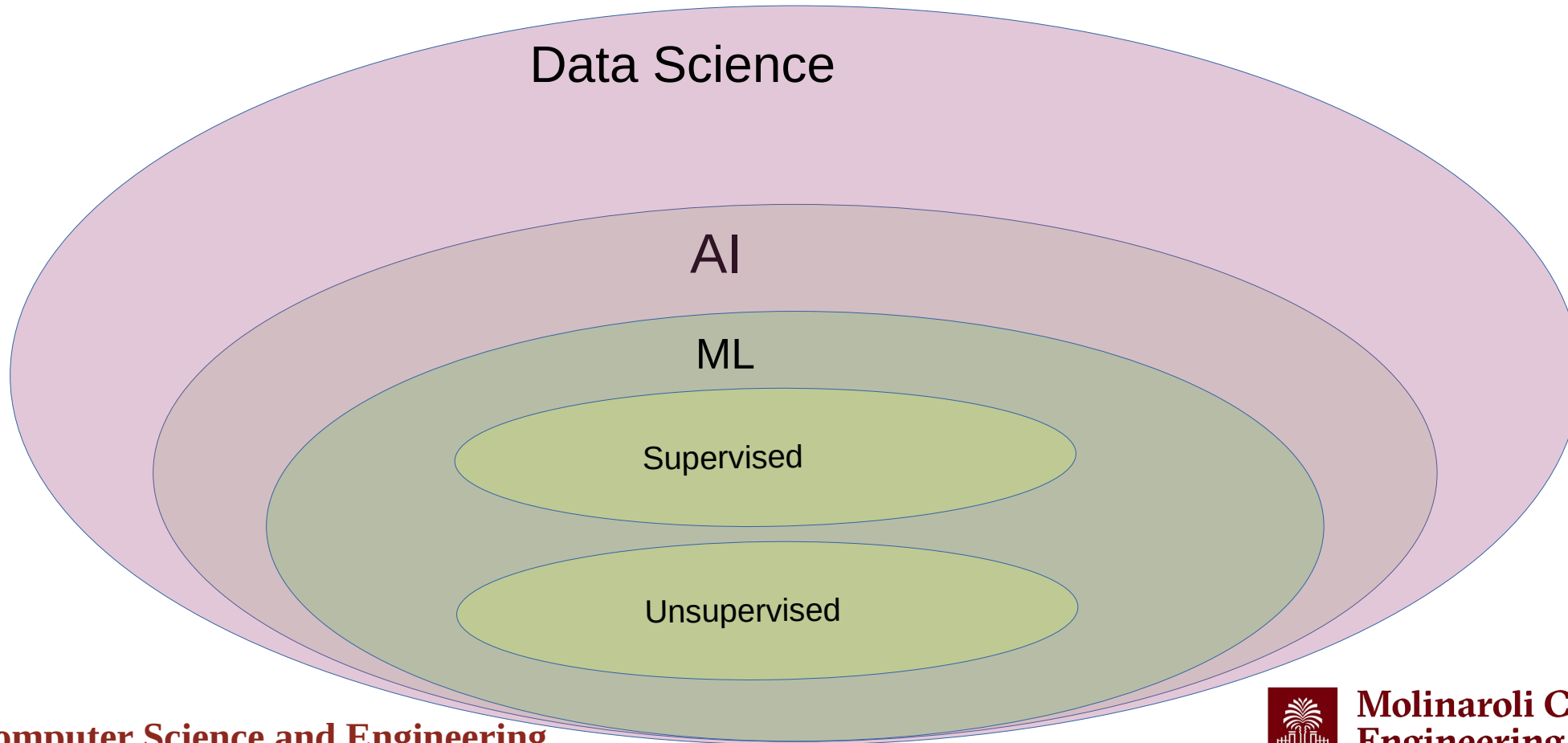
Data Lifecycle/Path

- Data scientist play a role at each step, to various degrees
- AI/ML play a critical role in application of data processing

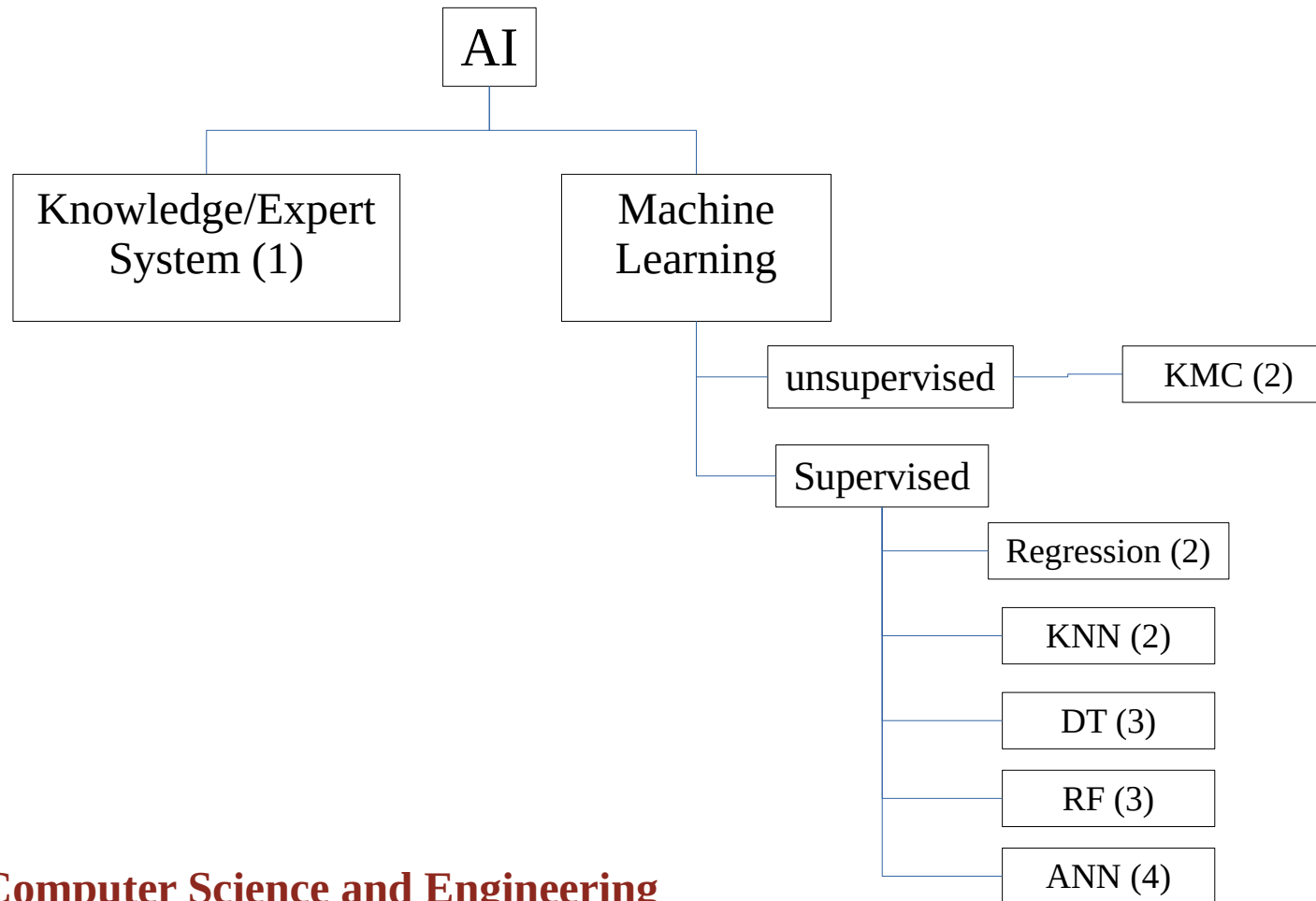


Hierarchy of Data Science, AI, and ML

- The relationship can be represented as the following Venn diagram



Taxonomy of Artificial Intelligence



AI versus ML

- Unintelligent/manual systems
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- Examples of AI but not ML
 - Programmable thermostat
 - Example: if after 7 PM then drop temperature to 76°
- Examples of AI that are ML
 - Smart thermostats
 - Observes and learns your preferences for temperature
 - Given the data, find patterns that determine responders to a drug
 - Given the data, find the distinguishing attributes of smoking
 - Given the data, find the common characteristics of patients with vascular disease
 - Given the images, find the perpetrators in a crowd



Critical AI/ML Terms

- Features, variables, input, X
- Output, outcome, desired output, expected output, y
- Training versus testing sets (training/testing input, training/testing output)
- Over fitting, memorization, generalization
- Hyperparameter tuning
- **Measure of performance**: R^2 , RMSE, MSE, selectivity, sensitivity, precision, recall, accuracy, f1-score, ...
- Leave a comment <https://forms.gle/53YksWgEuBj5Lyza6>

THANKS!

Homay Valafar
Computer Science and Engineering
homayoun@cse.sc.edu



**Molinaroli College of
Engineering and Computing**
UNIVERSITY OF SOUTH CAROLINA