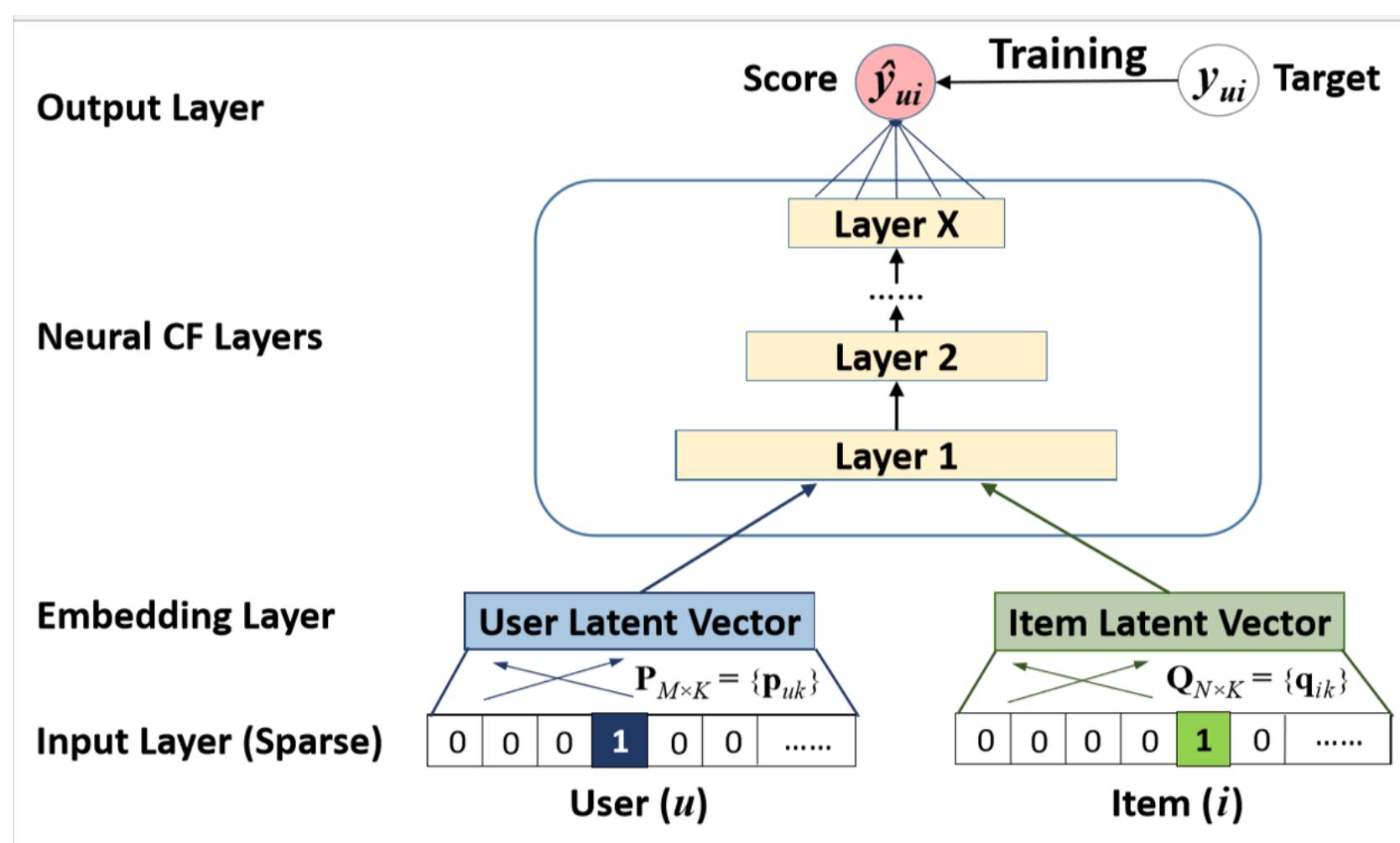
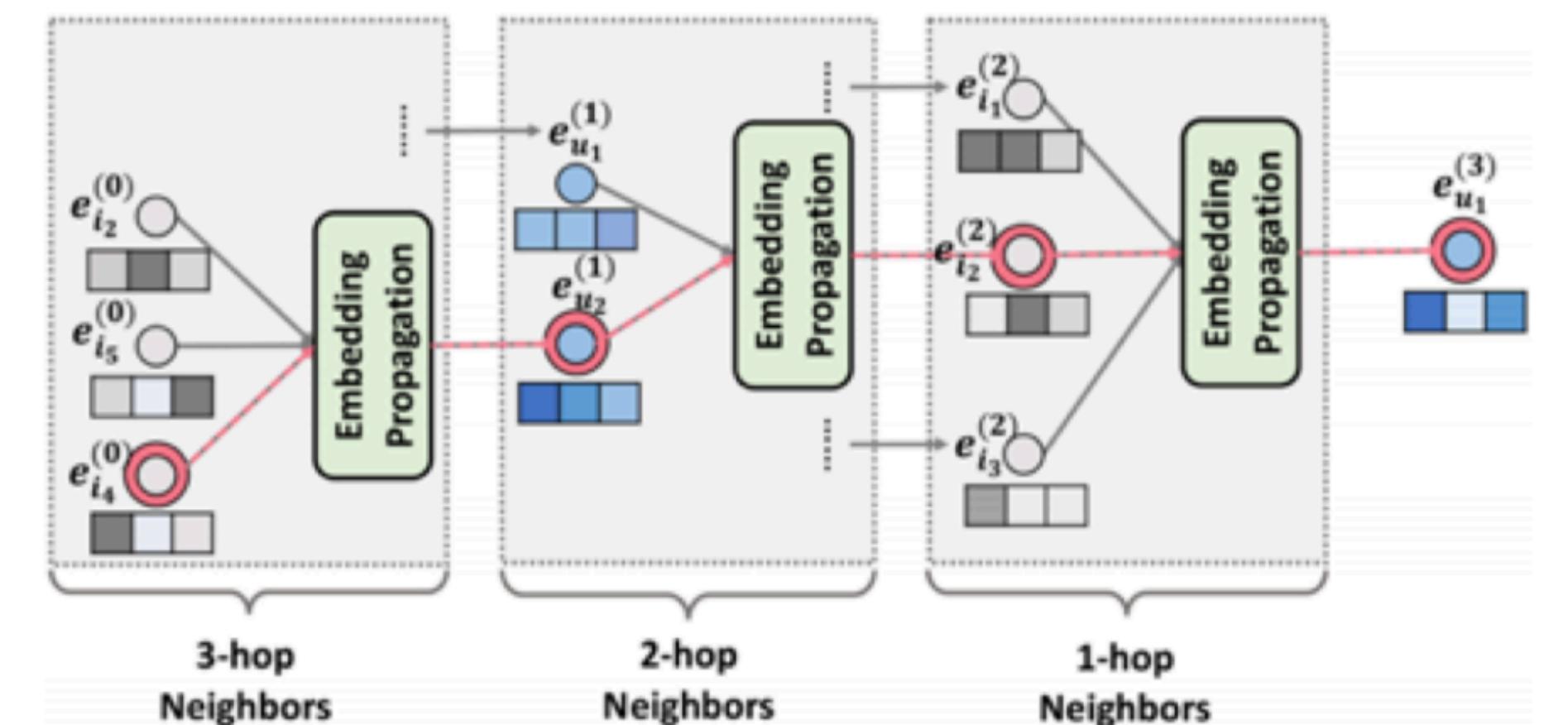
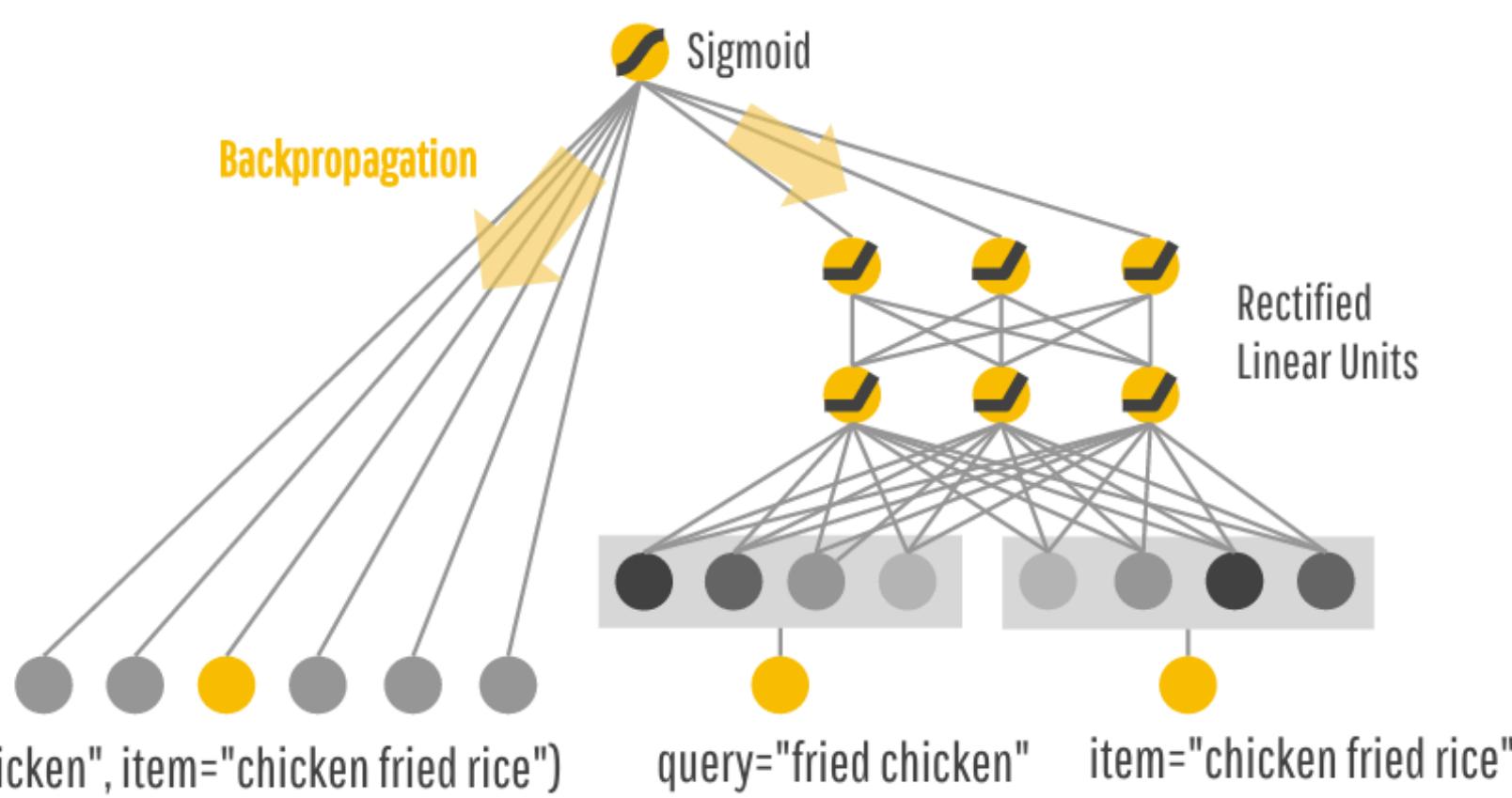
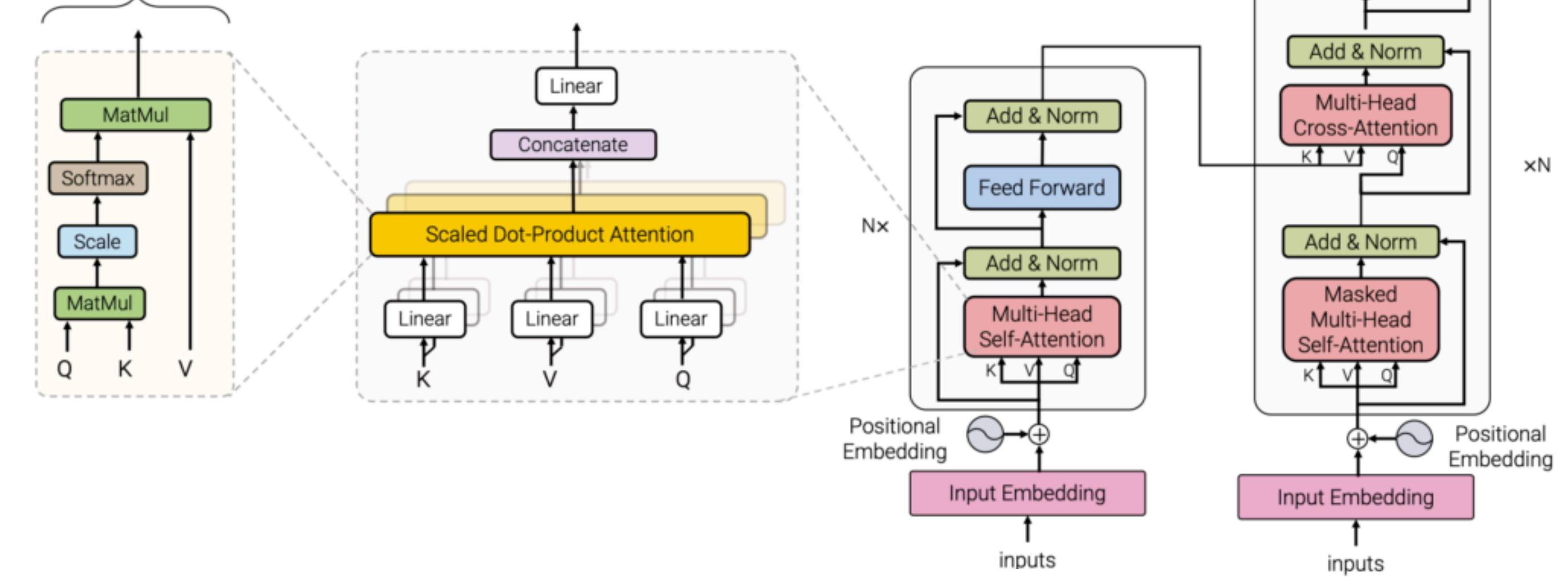


Model Academia

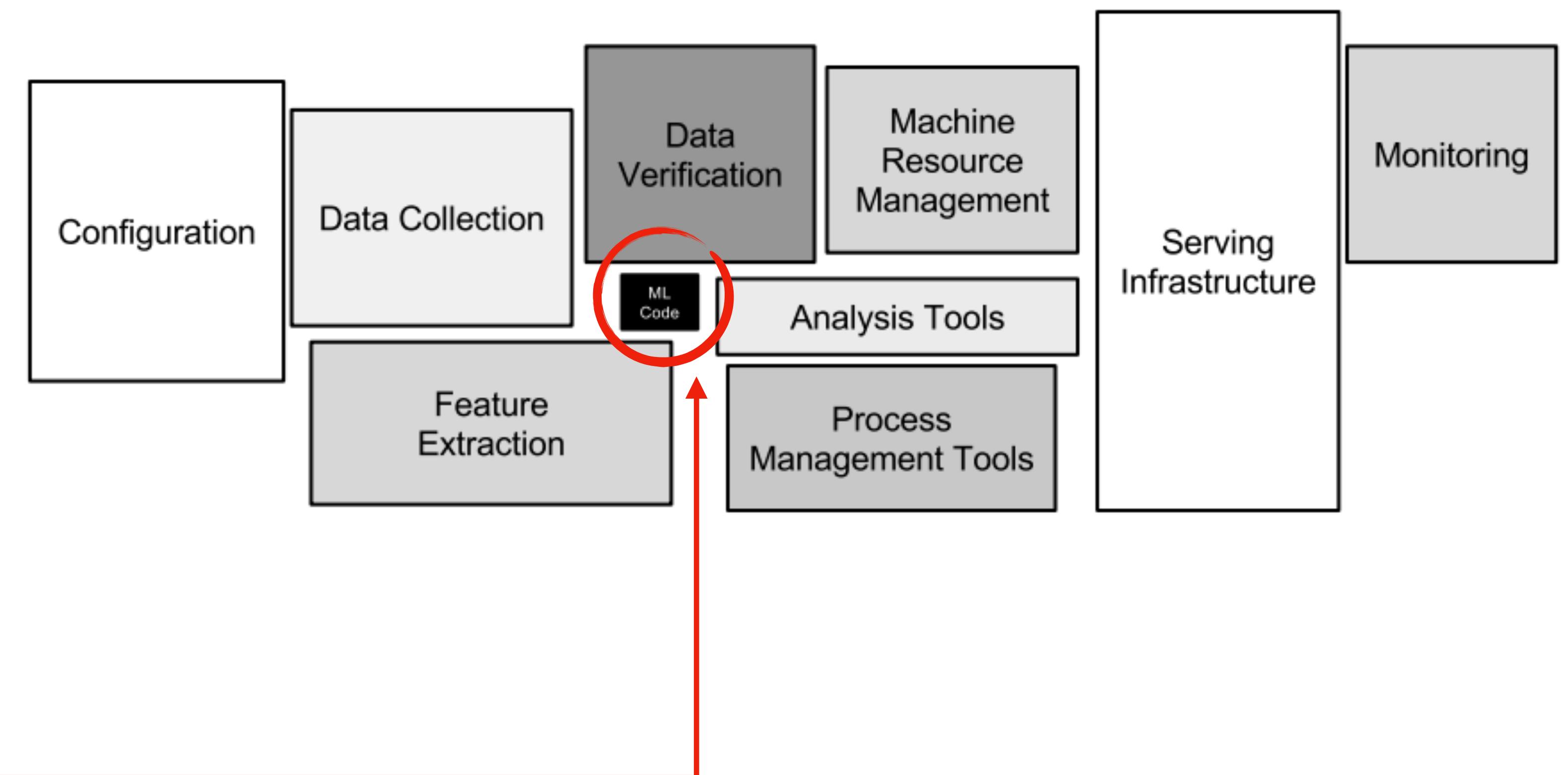
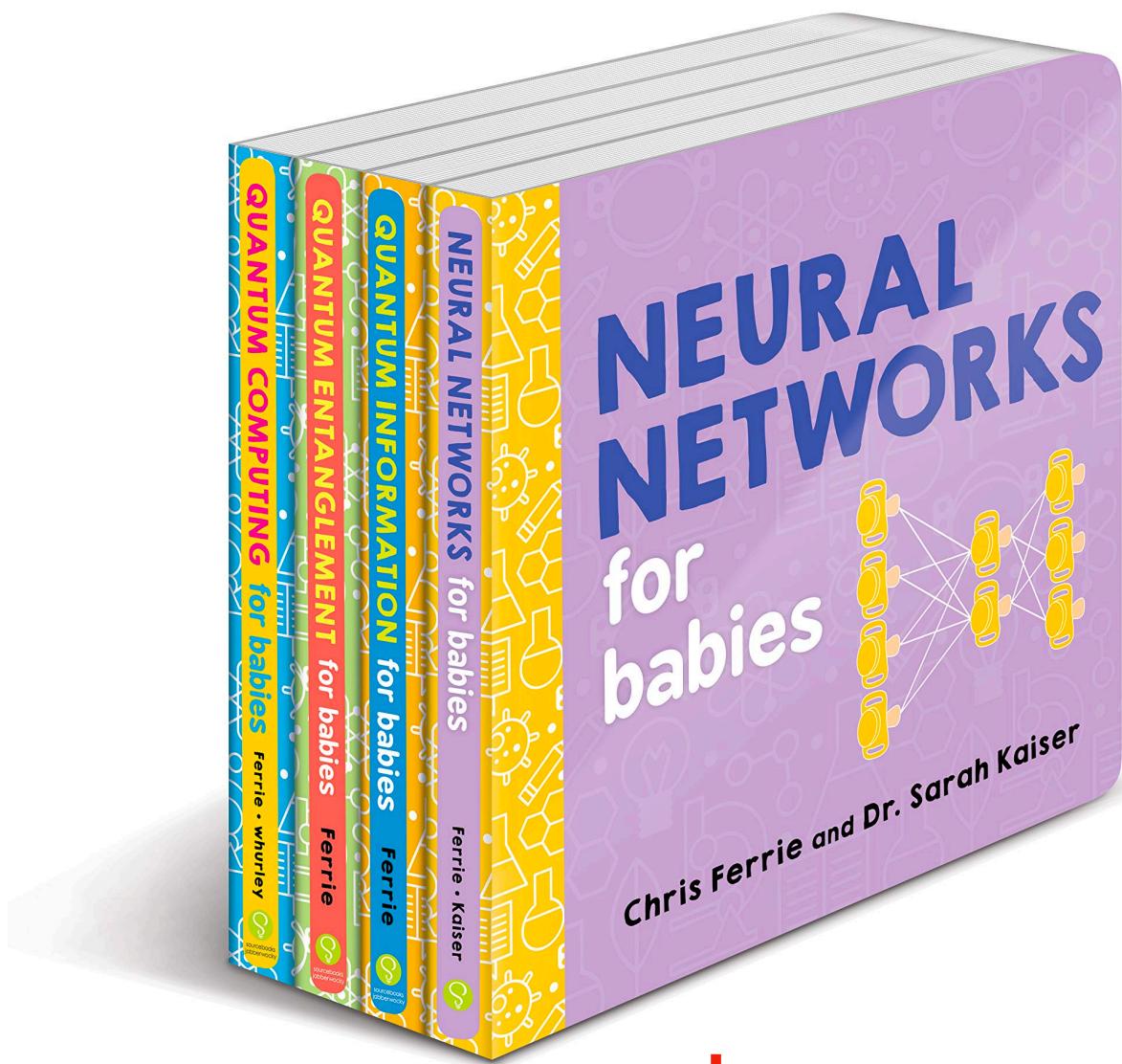


Computational
and Memory
Complexity

$$\mathcal{O}(n^2)$$

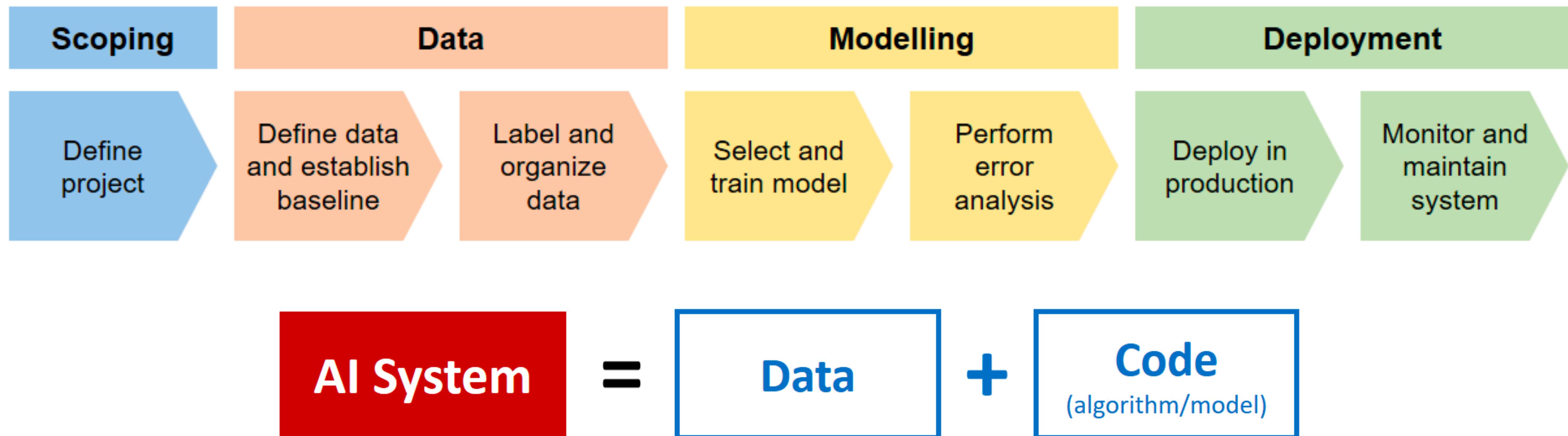


Model Industry



MLOps

- Keywords: MLOps (ML+DevOps), Data-centric



Metrics

Metrics

Academia

- Accuracy, accuracy, accuracy (i.e., Model centric)
- Popular metrics:
 - MAP
 - NDCG
 - Precision
 - Recall
 - F1
 - AUC
 - etc.

Metrics

Industry

- Beyond accuracy
- Other metrics/factors:
 - Diversity, Recommender Persistence, Privacy, etc.
 - Business Metrics, KPIs (i.e., different objectives)
 - System monitoring (e.g., online metric vs. offline metric): Data drift, Model drift, Data distribution shift, etc.



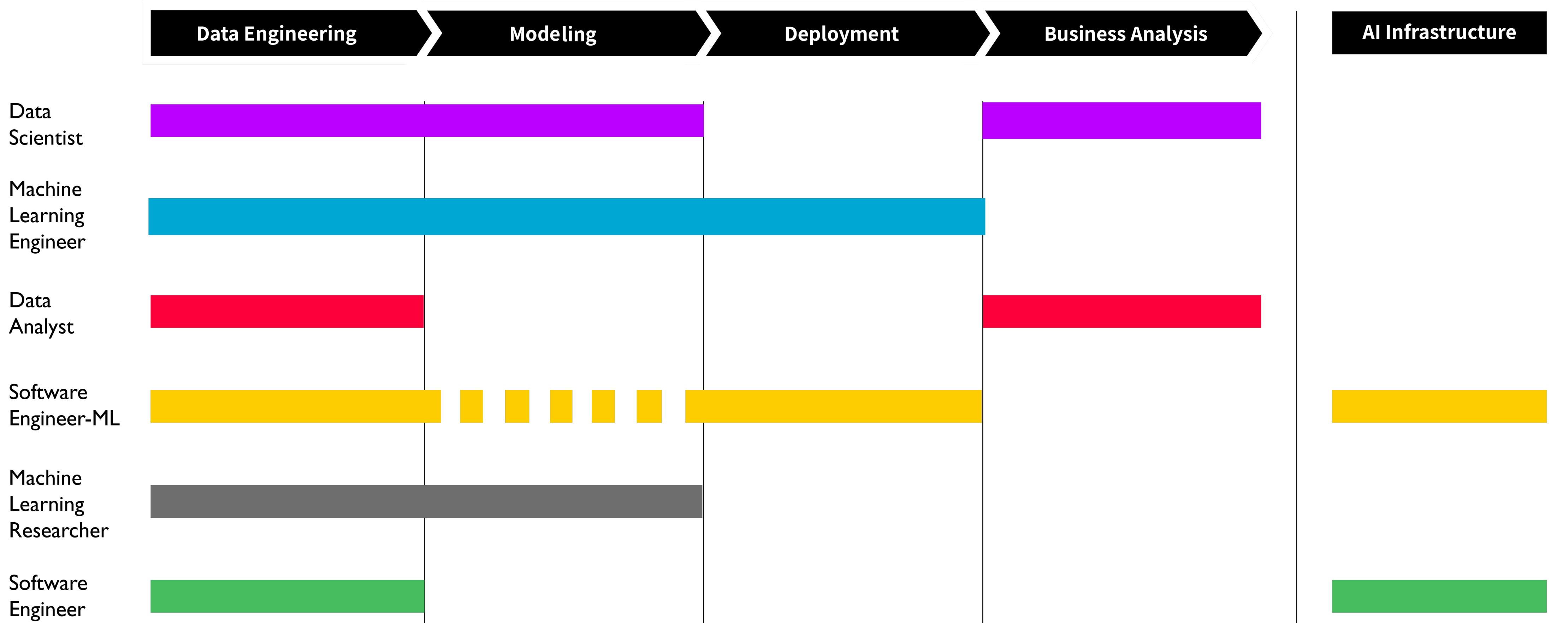
Open Challenges

Challenges

- Sparsity
- Cold-start
- Biases and Fairness
- Robustness
- Dynamics
- Scalability
- Privacy and Security
- Explanability and Interpretability
- ...

Career Path

Career Path



Summary

Summary

- Deep Learning based Recommender System!
- Academia vs. Industry. Break the gap?
 - Model centric vs. Data centric
 - MLOps
- Recommender Systems is not an easy topic
 - Accuracy isn't sufficient
 - Not easy to capture user behaviour (e.g., reward function design)