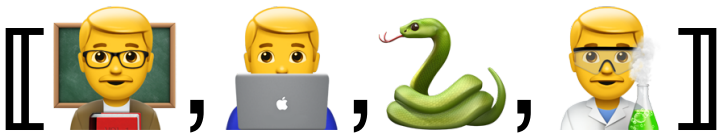
Lecture Notes for

Machine Learning in Python



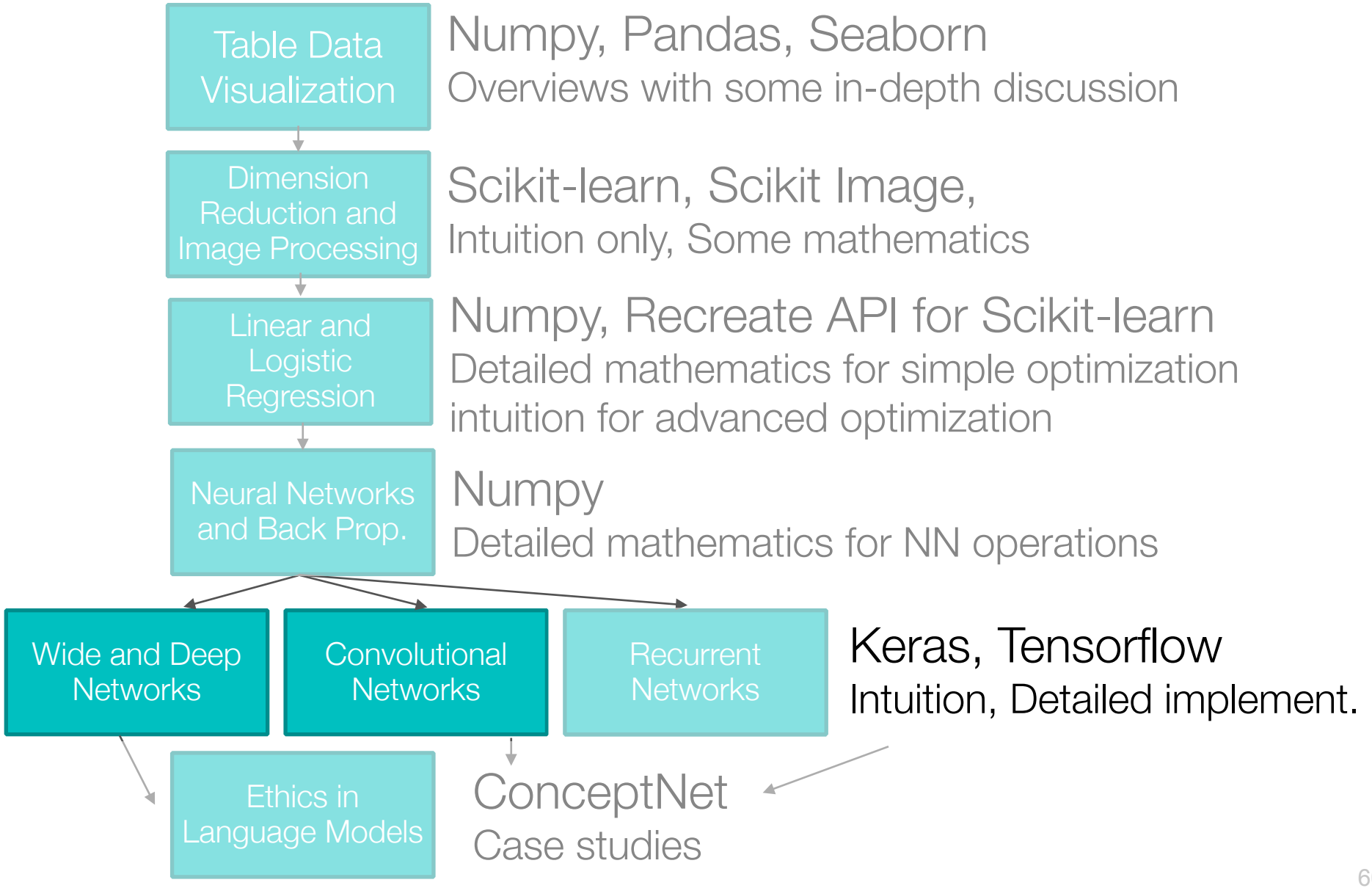
Professor Eric Larson

Wide and Deep Networks Deep Dive

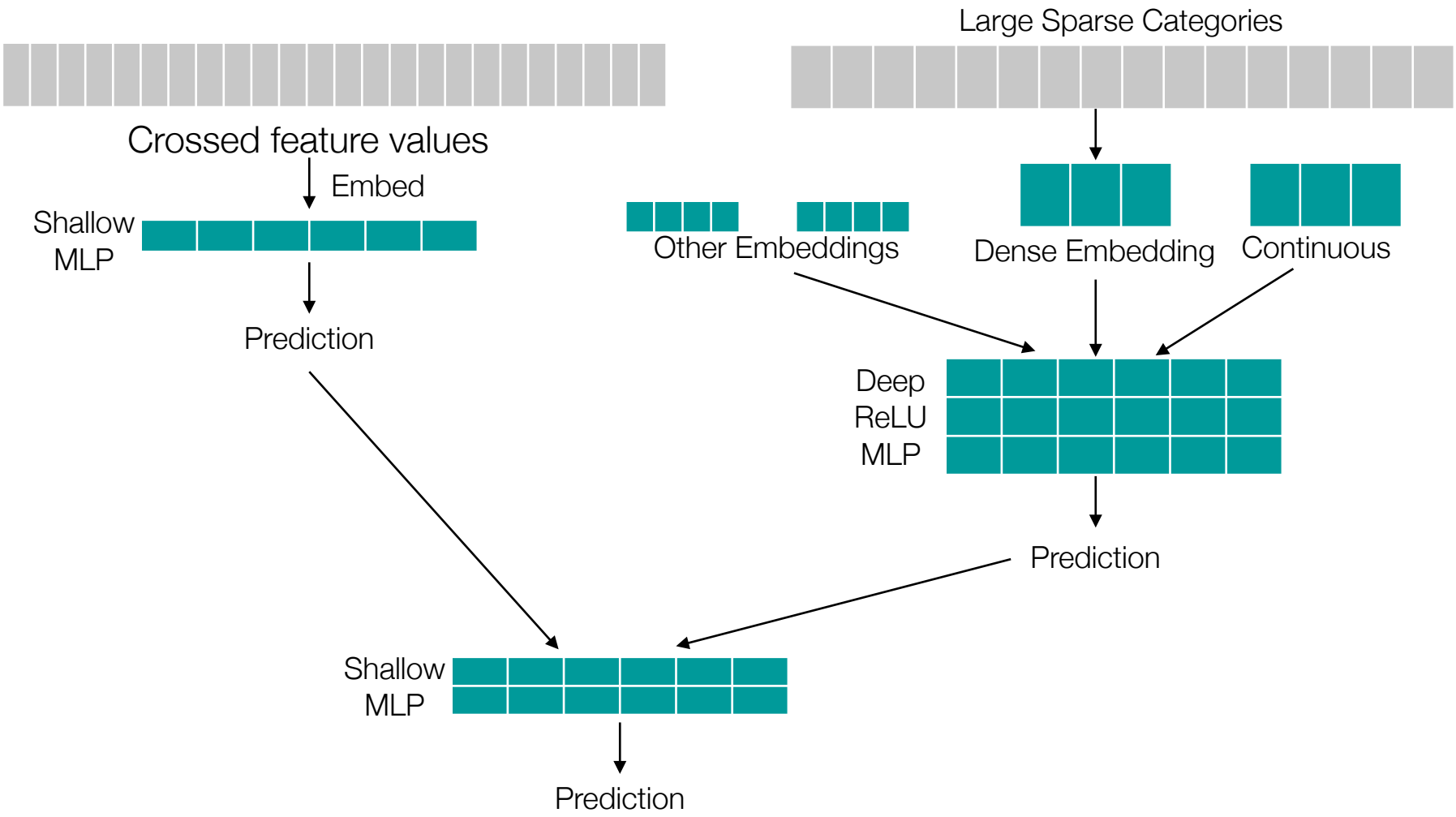
Logistics and Agenda

- Logistics
  - Wide/Deep due soon!
- Agenda
  - Wide/Deep Finish Demo and Town Hall
  - Basic CNN architectures and Demo

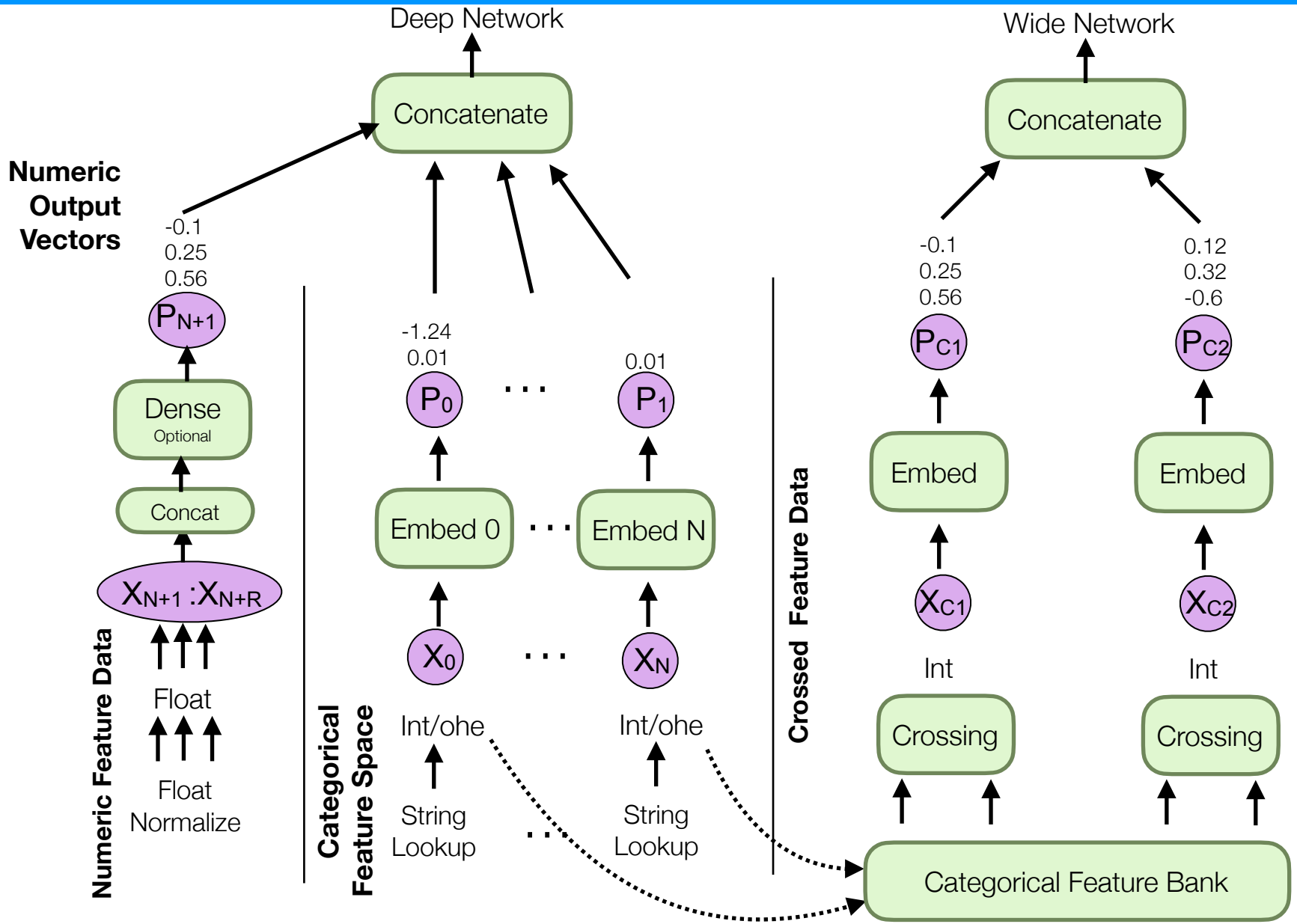
Class Overview, by topic



Last Time:


Large Sparse Categories
Crossed feature values
Embed
Shallow MLP
Prediction
Other Embeddings
Dense Embedding
Continuous
Deep ReLU MLP
Prediction
Shallow MLP
Prediction

Crossed Embeddings in Keras



Wide and Deep

"Finish" Demo

Adding Wide Branches

`10a. Keras Wide and Deep as TFData.ipynb`

Town Hall, Wide and Deep Networks

Exceptional Credit

Trainable Matrix in Network

Reduced Dimensions

0.1	0.3	-0.01	0.15
0.2	1.2	-0.5	0.8

Num Categories

$\cdot$

Eye Color

$$\begin{bmatrix} 0 \\ 1 \\ 0 \\ 0 \end{bmatrix} \begin{matrix} \text{Green} \\ \text{Brown} \\ \text{Blue} \\ \text{Hazel} \end{matrix}$$