Week 2

Machine Learning Data Lifecycle in Production

Week 2

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Week 2: Feature Engineering, Transformation and Selection

Robert Crowe

Implement feature engineering, transformation, and selection with TensorFlow Extended by encoding structured and unstructured data types and addressing class imbalances

Learning Objectives

- Define a set of feature engineering techniques, such as scaling and binning
- Use TensorFlow Transform for a simple preprocessing and data transformation task
- Describe feature space coverage and implement different feature selection methods
- Perform feature selection using scikit-learn routines and ensure feature space coverage

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Feature Engineering

Video: Introduction to Preprocessing 5 min — Resume

Video: Preprocessing Operations 6 min

Video: Feature Engineering Techniques 10 min

Video: Feature Crosses 3 min

Practice Quiz: Feature Engineering and Preprocessing 3 questions

Feature Transformation at Scale

Video: Preprocessing Data at Scale 12 min

Video: TensorFlow Transform 14 min

Video: Hello World with tf.Transform 7 min

Lab: Simple Feature Engineering 50 min

Lab: Feature Engineering Pipeline 50 min

Practice Quiz: Feature Transformation 3 questions

Feature Selection

Video: Feature Spaces 5 min

Video: Feature Selection 4 min

Video: Filter Methods 6 min

Video: Wrapper Methods 5 min

Video: Embedded Methods 5 min

Reading: Week 2 Optional References 3 min

Lab: Feature Selection 50 min

Practice Quiz: Feature Selection 4 questions

Assignment

Programming Assignment: Feature Engineering 2h — Due Dec 27, 1:59 AM CST