

# Certified Data Science Practitioner (CDSP)



# Online Course

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## Course Modules

### Defining the question to be addressed through the app data

#### 1. Identify the project scope

- Identify project specifications, including objectives
- Identify mandatory deliverables, optional deliverables
- Identify project limitations (time, technical, resource, data, risks)

#### 2. Understand stakeholder challenges

- Understand stakeholder terminology
- Become aware of data privacy, security, and governance policies
- Obtain permission/access to data

#### 3. Classify a question into a known data science problem

- Access references
- Identify data sources and type
- Select modeling type



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## Extracting, Transforming, and Loading Data

### 4. Gather relevant datasets

- Read data
- Research third-party data availability
- Collect open-source data

### 5. Clean datasets

- Identify and eliminate irregularities in data
- Parse the data
- Check for corrupted data
- Correct the data format for storing/querying purposes
- Deduplicate data

### 6. Merge datasets

- Join data from different sources

### 7. Apply problem-specific transformations to datasets

- Apply word embeddings
- Generate latent representations for image data



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## 8. Load data

- Load into DB
- Load into DataFrame
- Export to CSV files
- Load into visualization tool
- Make an endpoint

## Performing exploratory data analysis

## 9. Examine data

- Generate summary statistics
- Examine feature types
- Visualize distributions
- Identify outliers
- Find correlations
- Identify target feature(s)

## 10. Preprocess data

- Identify missing values
- Make decisions about missing values (e.g., imputing method)
- Normalize, standardize, or scale data



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## 11. Carry out feature engineering

- Apply encoding to categorical data
- Assign feature values to bins or groups
- Split features
- Convert dates to useful features
- Apply feature reduction methods

## Building models

## 12. Prepare datasets for modelling

- Decide proportion of dataset to use for training, testing, and
- Split data to train, test, and (if applicable) validation sets

## 13. Build training models

- Define algorithms to try
- Train model
- Tune hyperparameters, if applicable

## 14. Evaluate models

- Define evaluation metric
- Compare model outputs
- Select best performing model
- Store model for operational use



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## Testing models

### 15. Test hypotheses

- Design A/B tests
- Define success criteria for test
- Evaluate test results

### 16. Test pipelines

- Put model into production
- Ensure model works operationally
- Monitor pipeline for performance of model over time

## Communicating findings

### 17. Report findings

- Implement model in a basic web application for demonstration
- Derive insights from findings
- Identify features that drive outcomes (e.g., explainability)
- Show model results
- Generate lift or gain chart

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