

Introduction to Data Science, Analytics and Artificial Intelligence course

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Saturday, April 14

Introduction to data science and analytics (10:00-11:30)

1. Data science concepts
2. Application areas

Coffee Break (11:30 - 11:50)

Getting data into Python (11:50-13:30)

1. Working with CSV and JSON format/files
2. Web-scraping in Python
3. Using APIs in Python (Twitter API, New York Times API, etc.)
4. Using cloud AI services from Python

Lunch (13:30-14:30)

Company presentations (14:30-14:45)

Announcement of optional mini-competition and prizes (14:45-15:00)

Machine Learning I – linear and logistic regressions (15:00-16:00)

1. Modeling process and machine learning
2. Optimization for regression modeling, data science and AI
3. Linear regression

Break (16:00 - 16:15)

Machine Learning I – linear and logistic regressions (16:15-17:00)

1. Logistic regression
2. Regression case studies in Python

Sunday, April 15

Machine Learning II – advanced classification and clustering (10:00-11:30)

1. Classification (decision trees, SVM, kNN)
2. Clustering (K-means, Fuzzy C-means, Hierarchical Clustering, DBSCAN)
3. Association rules
4. Ensemble methods (random forests, Xgboost)
5. Machine learning case studies in Python

Break (11:30 - 11:50)

Part I – Cognitive computing and artificial intelligence (11:50-13:30)

1. Text analytics and Natural Language Processing (NLP)
2. Reinforcement learning
3. Neural networks and brief introduction to deep learning

Lunch (13:30-14:30)

Presentations by finalists of mini-competition (14:30-15:00)

Part II – Cognitive computing and artificial intelligence (15:00-16:00)

4. Spatio-temporal analytics
5. Cognitive computing case studies in Python

Visual analytics and storytelling based on analytics (16:00-17:00)

1. Visual analytics and visualizations
2. Validating analytics
3. Storytelling based on analytics
4. Decision-making based on analytics

Afterparty (17:30-19:00)