Certificate

We hereby confirm that

Ali Jafari

has completed the intensive program

Education and Training as Data Scientist

with 540 hours of programming practice
(corresponds to 720 lessons)

successfully.

Participation from 22.04.2024 until 17.07.2024.
Hamburg, the 19.07.2024

Klaus Hufnagel, CEO

Evgeny Savin, Lead Coach

Certified by: Hanseatische Zertifizierungsagentur HZA

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Curriculum

In 720 lessons the students have learned, discussed and practiced the following content in several tasks and projects:

Programming & Database
Python
- pandas
- scikit-learn
- TensorFlow/Keras

Visualization
- Matplotlib
- seaborn
- Plotly
- Altair

SQL
Unix
Git (GitHub)

Exploratory Data Analysis (EDA) & Statistics
Data Analysis
- Distributional Analysis
- General Statistics

Data Visualization
- Distribution Plots
- Relationship Plots
- Geo Visualizations

Data Science Portfolio Projects
EDA Project
Predictive Modeling Project
Final Project / Capstone (4 weeks)

Machine Learning Algorithms
Supervised Learning
- Linear Regression
- Logistic Regression
- KNN
- Decision Trees
- Random Forest
- Ensemble Methods

Unsupervised Learning
- Clustering
- Dimensionality Reduction

Deep Learning
Natural Language Processing
Time Series

Evaluation & Performance Metrics
Confusion Matrix
Regression and Classification Metrics
Error Analysis
Model Tuning
- Bias-Variance Tradeoff
- Regularization
- Cross-Validation

Optimization
- Gradient Descent
- Cost Functions

Machine Learning Engineering
Unit Testing
Online Dashboards
Intro to Cloud

Collaborative Working & Social Learning
Pair Coding
Agile Workflow
- Daily Stand-Ups
- Retrospective
- Kanban Project Board

Daily Class Review
Team Work & Self-Organization Skills
Career Coaching & Mentoring

Communication with Stakeholders
Business Presentation
- Non-Technical Stakeholders

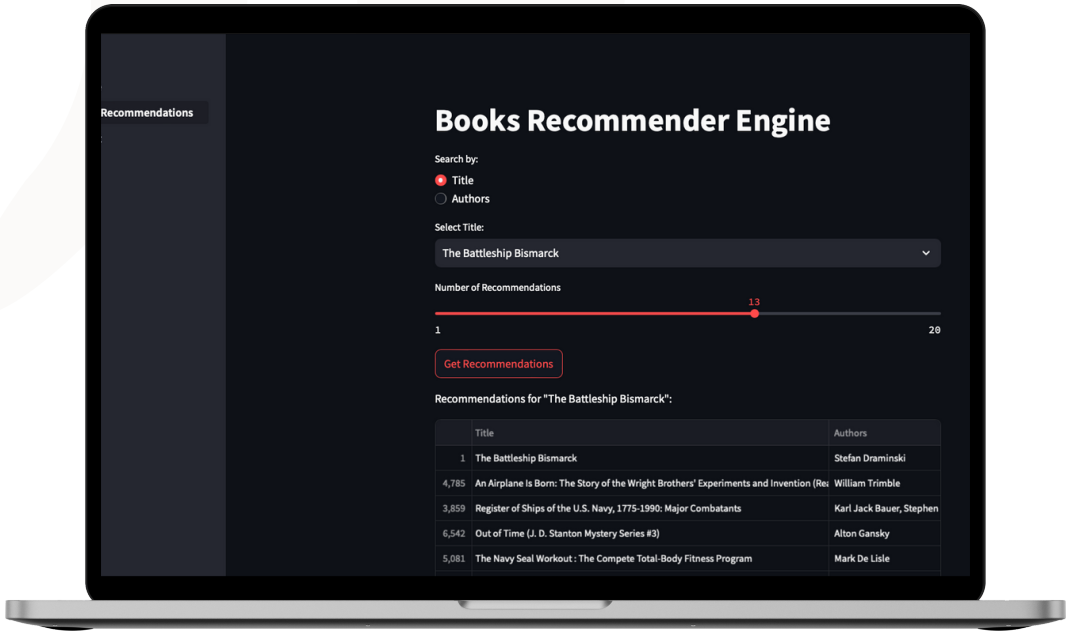
Data Science Lifecycle Presentation
- Technical Stakeholders

Stakeholder Review
- Compact & Time-Critical Project Alignment

Capstone Project

Designed and implemented by

Ali Jafari



Summary:

the Book Recommender: develop and implement a personalizing book recommendations based on content & user behavior, using natural language processing (NLP) technique.

Project title:

'Book Recommender System'

Highlights:

Machine Learning NLTK scikit-learn SciPy Sentiment Analysis Text Processing Data Visualization Tensorflow Gensim Natural Language Processing Streamlit Regular Expressions Transformers Github Statistical Analysis / Python , NLP , Word-Embedding,

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