

# Certificate

We hereby confirm that

**Grace Anulika Eze**

---

has completed the intensive program

**Education and Training as Data Practitioner**

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

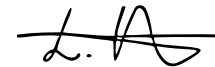
successfully.

Participation from 13.03.2023 until 19.09.2023.  
München, the 22.09.2023



---

Dalia Das, Founder & CEO



---

Larissa Hubschneider, Lead  
Coach

# Curriculum

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

## Programming & Tools

- Unix and Tools
  - Filesystem manipulations
  - git
- Google Sheets
  - Formulas
  - Pivot tables
  - V-Lookups
- Python
  - Functions
  - Data Types
  - Pandas
  - Numpy
  - Matplotlib
  - Seaborn
  - API connections
- Tableau
  - Connecting to data
  - Calculated Fields
  - Level of Detail Calcs
  - Dashboarding

## SQL

- DBeaver
- SQLAlchemy
- Creating Tables
- Querying Data

## Communication and Stakeholder Management

- Requirements gathering
- Presentation techniques
- Technical vs non-technical stakeholders
- Stakeholder review

## Data Analysis & Statistics

- General Statistics
- Descriptive Statistics
- Inferential Statistics
- Exploratory Data Analysis
- Data Visualization
- Distributional Analysis
- Correlation

## Data Driven Mindset

- KPIs
- A/B Testing
- Data Ethics

## Advanced Analytics

- Regression & Classification
  - OLS-based models
- Clustering
  - K-means
  - DBScan

## Machine Learning Algorithms

- Distance Metrics + KNN
- Gradient descent
- Decision Trees
- Ensemble Methods
- Clustering
- Bias-Variance-Tradeoff + Regularization
- Evaluation Metrics
- Logistic Regression

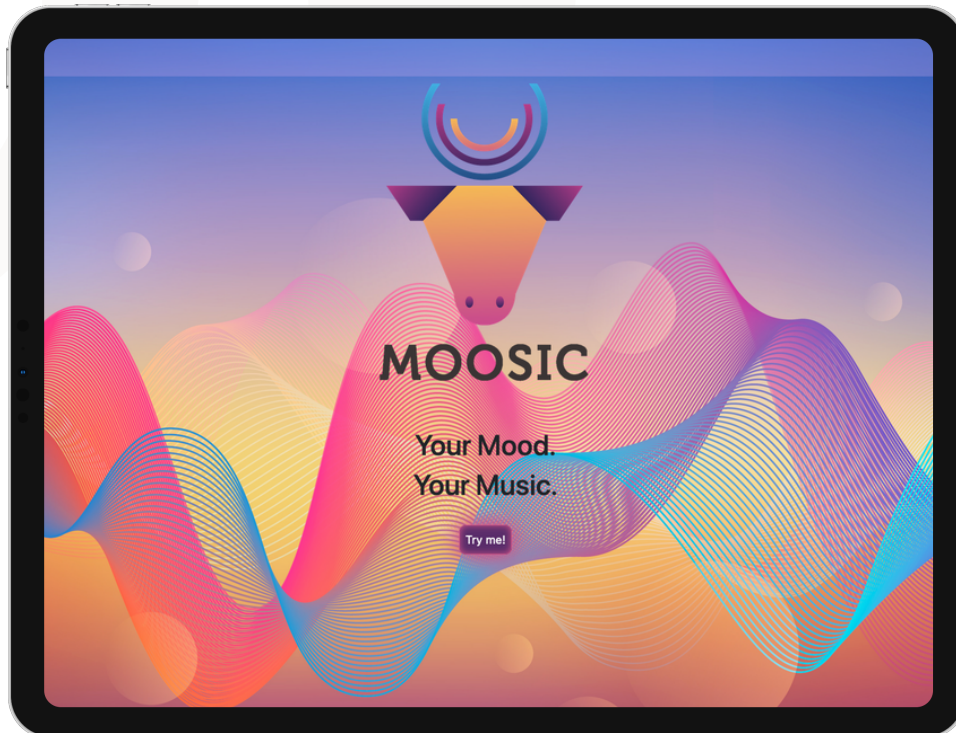
## Collaborative Working & Social Learning

- Pair Coding
  - Driver & Navigator
- Agile Workflow
  - Daily Stand-Ups
- Daily Class Review
  - Team work & Self-organization skills
- Group Work, Individual Exercises, Reversed Classroom
  - (Presentations from students)
- Git-Workflow, Google Drive (Docs/Tables)
- Students 1:1
  - Spot checks with instructional team
- Project team work
  - Github Project Board

# Capstone Project

Designed and implemented by

**Grace Anulika Eze**



## Summary:

Our data product is a mood based music recommender that fine-tunes and makes personalised music suggestions by introducing user input options with a focus on mood and genre. It aims to optimize recommendations based on one's ever-evolving music preferences, diverse taste and the complexity of listener's moods. It is user-centric and adaptable.

## Project title:

**'MOOSIC - mood based music recommendation system'**

## Highlights:

Mood Feature Engineering / ETL /  
Recommendation Algorithms / Python /  
Scikit-Learn / NumPy / Pandas /  
Matplotlib / DBeaver / PostgreSQL /  
SQLAlchemy / Git / Kanban / Object  
Serialization