### Practicum

# Data Analyst

### Syllabus

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Each course lasts two or three weeks and represents approximately 40 hours of study.

7 months

### **Basic Python**

Your introduction to the world of data science! Key concepts and3 weeks,basic syntax in Python. Loops, conditions, and functions. The40 hourspandas library for data analysis. Your first analytical case study,followed by your first project.

- Chapter 1. Variables, Printing, Data Types, and Arithmetic Operations
- Chapter 2. Strings
- Chapter 3. Lists
- Chapter 4. for Loops
- Chapter 5. Nested Lists
- Chapter 6. Conditions and Loops
- Chapter 7. Creating Functions
- Chapter 8. Dictionaries
- Chapter 9. pandas for Data Analysis
- Chapter 10. Data Preprocessing
- Chapter 11. Analyzing Data and Presenting Results
- Chapter 12. A Quick Overview of the Jupyter Notebook

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### **Data Preprocessing**

Compensating for less-than-perfect data. Handling missing and duplicate values. Changing data types. Systems thinking for analysts. +1 project foryour portfolio3 weeks, 40 hours

- Chapter 1. Introduction to Data Preprocessing
- Chapter 2. Working with Missing and Duplicate Values
- Chapter 3. Changing Data Types
- Chapter 4. Categorizing Data
- Chapter 5. Systems and Critical Thinking for Analysts

### Exploratory Data Analysis (EDA)

Performing initial scans to detect patterns in data. Building basic graphs and generating your first hypotheses.

+1 project foryour portfolio3 weeks, 40 hours

- Chapter 1. Introduction to Exploratory Data Analysis (EDA)
- Chapter 2. First Graphs and Conclusions
- Chapter 3. Data Slices
- Chapter 4. Working with Several Data Sources
- Chapter 5. Relationships Between Datasets
- Chapter 6. Validating Results

### **Statistical Data Analysis**

Probability theory, the most common distributions, and statistical methods in Python. Sampling and statistical significance. Identifying and handling anomalies. +1 project for your portfolio

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- Chapter 1. Introduction to Statistical Data Analysis
- Chapter 2. Descriptive Statistics
- Chapter 3. Probability Theory
- Chapter 4. Testing Hypotheses



### **Integrated Project 1**

Identify patterns to help you determine whether a given video game will be commercially successful or not.

+1 project for your portfolio 1 week, 20 hours

1-week break

3 weeks, 40 hours

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### Data Collection and Storage (SQL)

How databases are structured and how to pull data from them using SQL queries. Finding data online.

- Chapter 1. Introduction to Data Collection and Storage (SQL)
- Chapter 2. Retrieving Data from Online Resources
- Chapter 3. SQL as a Tool for Working with Data
- Chapter 4. Advanced SQL Features for Analysis
- Chapter 5. Relationships Between Tables
- Chapter 6. Soft Skills
- Bonus Chapter: PySpark

### **Business Analytics**

Applying data analysis in business. Business metrics and KPIs. User data analysis. Marketing analytics and related tools. The sales funnel.

+1 project for your portfolio 2 weeks, 40 hours

- Chapter 1. Introduction to Business Analytics
- Chapter 2. Metrics and Funnels
- Chapter 3. Cohort Analysis
- Chapter 4. Unit Economics
- Chapter 5. User Metrics
- Chapter 6. Soft Skills
- Bonus Lesson: Optimizing Data in pandas

+1 project for your portfolio 2 weeks, 40 hours

### Making Business Decisions Based on Data

Methods and tools for testing hypotheses. Experimental design. Seasonality. Cohort analysis. A/B testing.

- Chapter 1. Course Introduction
- Chapter 2. The Basics of Testing Hypotheses in Business
- Chapter 3. Choosing an Experimental Method
- Chapter 4. Prioritizing Hypotheses
- Chapter 5. Preparing for an A/B Test
- Chapter 6. Analyzing the Results of A/B Test
- Chapter 7. Soft Skills

+1 project for your portfolio 2 weeks, 40 hours

### How to Tell a Story Using Data

Presenting your research. Data visualization methods. Creating reports to explain findings. The seaborn library.

- Chapter 1. Course Introduction
- Chapter 2. Preparing Presentations
- Chapter 3. The seaborn Library
- Chapter 4. The plotly Library

### **Integrated Project 2**

Bring together everything you've learned so far to analyze the results of a food app's A/B test.

+1 project for your portfolio 1 week, 20 hours

1-week break

### Automation

Automating data analysis processes and scripting routine tasks. Data visualization methods. Presenting results. +1 project for your portfolio 2 weeks, 40 hours

- Chapter 1. Course Introduction
- Chapter 2. Data Pipelines and Why to Use Them
- Chapter 3. Designing and Developing Dashboards with Dash
- Chapter 4. Tableau
- Bonus: The Basics of Launching Scripts
- Bonus: More on Data Pipelines
- Bonus: More on Dash

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## +1 project foryour portfolio2 weeks, 40 hours

• Bonus: More on Tableau



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### **Forecasts and Predictions**

Machine learning methods and applications. Classification, forecasting, clustering. Regression. Decision trees.

- Chapter 1. Business Tasks Involving Machine Learning
- Chapter 2. Machine Learning Algorithms
- Chapter 3. Solving Tasks Related to Machine Learning

### **Final Project**

Apply everything you've learned in a two-week bootcamp that recreates the experience of working as a junior analyst.

+1 project foryour portfolio2 weeks, 40 hours

+1 project foryour portfolio2 weeks, 40 hours

### Practicum

# Career help

In addition to the main educational course, our career help is divided into three parts: the Career Prep Course, Career Acceleration Program, and the Apiary projects.

### **Career Prep Course**

This is a course devoted to preparing for life after Practicum. During this course, you will learn how to create a resume, a LinkedIn profile, and a GitHub account, along with improving networking and interviewing skills. This course is self-paced and ends with a final task. We'll also perform a review of your career artifacts. 40 hours + Resume, LinkedIn and Github profiles

### Resume

Learn how to write an eye-catching resume, transform your non-tech experience into a strength.

- Compile a ready-to-use resume
- Gain access to a resume improvement tool

### **Creating an Online Presence**

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Assemble your GitHub portfolio and ensure your LinkedIn looks professional and informative.

- Produce a production-ready portfolio
- Launch your LinkedIn profile

### Being a Networking Ninja

Learn how to become a networking professional, and how to write the perfect cover letter.

- Unlock a networking roadmap
- Prepare a cover letter template

### The Job Search

Learn where to find a job and prepare for the search!

- Access job searching resources & application tracker tool
- Produce a target job list

### **An Interview Masterclass**

Familiarize yourself with different interview types, common questions you might face, and practice tech assignments.

- Learn interview do's & don'ts
- Master the STAR technique and sound more professional
- Get tech interview help

### **Career Acceleration Program**

Prepare for real-world interviews and gain experience through authentic practice. This program is designed to help you find a real job and also provides some work with technical skills.

- Attend mock interviews
- Receive 1:1 career coaching
- Write technical articles and demonstrate your knowledge
- Produce demo videos of your work
- Participate in extracurricular activities

Up to 6 months after graduation

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• Join the Slack community

### **Apiary Projects**

You'll gain confidence solving work tasks that use a real company's data to provide them with valuable insights. Learn to communicate with clients, meet their expectations, exchange peer reviews with colleagues, and present results to the company. The Apiary projects become available for participants sometime between the 8-10th Sprint, depending on the project. They are also available after graduation. + 1-∞ real projectsfor your portfolio,5-6 weeks

- Assemble a portfolio project based on actual data
- Get a recommendation on LinkedIn by a real company
- Gain experience with freelance project workflow