

25. Oktober


# Time Series Prediction

## **GENERAL INTRODUCTION**

- **Personal Introduction**
- **Organizational Matters**
- **Introductory Discussion**
- **Course Projects**

# PERSONAL INTRODUCTION

# CHAT



**23W | Time Series Prediction** ☆

28 1 Wednesday, 6:15-8.00 p.m.: [Zoom](#); [Course Handbook](#); [Github](#) [Start call](#)

## Beginning of 23W | Time Series Prediction

This is the start of the 23W | Time Series Prediction channel, created by Steffen Brandt on August 28, 2023. Any member can join and read this channel.

[Add members to this channel](#) [Erstelle ein Board](#) [Set a Header](#)

August 28

**System** 9:28 PM  
@Steffen Brandt joined the channel.  
You and 2 others were added to the channel by @Steffen Brandt.

September 01

**System** 3:38 PM  
@Ronja Tornow joined the channel.


September 07

**System** 6:43 PM  
@Kristian Boroz updated the channel header to: <https://opencampus.zoom.us/j/95966793117>

- Please, ask questions to us in the chat



# COURSE HANDBOOK

 **opencampus.sh Machine Learning Program**

EDU-Platform Chat

Search...

opencampus.sh Machine Learning Program

Course Kick-Off

How do I choose a course?

FAQ

COURSES

Einführung in Data Science und maschinelles Lernen >

Machine Learning with TensorFlow v

Requirements for a Certificate of Achievement or ECTS

Preparation

**Week 1 - General Introduction**

Week 2 - Introduction to TensorFlow, Part I


Week 3 - Introduction to

## Week 1 - General Introduction

This week you will...


- get a basic introduction to neural nets in order to get a first intuition in the underlying mechanisms
- get a first idea about possible projects you might want to work on throughout the course


### Learning Resources



 **220419\_Introduction to Neural Nets.pdf** 4MB  
PDF


- Video Neural Networks Explained (12 minutes)
- Introductory course on Python from Kaggle
- Tutorial on Colab on Medium


# COURSE HANDBOOK


 **opencampus.sh Machine Learning Pro**



Synced 


 


Share 


Edit 







 Change Requests 

 Customize

 Insights

 Integrations

TensorFlow

Intermediate Machine Learning (Legacy SS2023) >

Intermediate Machine Learning >

**Time Series Prediction** v

Requirements for a Certificate of Achievement or ECTS

Projects & Frameworks

Preparation / YouTube

References / Books

Week 1 - Intro + Organisation

Week 2 - Forecasting basics with trends: AR + MA-models

Week 3 - Covering seasonality: From ARMA to SARIMA-models


Week 4 - Towards

## Time Series Prediction

Hi everybody.....it's Benjamin, Kristian and Yannick. We will give the Time Series Prediction course this semester and we are happy to welcome all participants.


We start with a short introduction of the course topics. Get to know each other and the other participants and explain the course structure and all the required tasks for a successful participation.


This requires i.e.: Give a project presentation and provide a well documented code with data via GitHub. Additionally you are only allowed to miss two class sessions during the semester.



Previous  
**Week 14+**

Next  
**Requirements for a Certificate of ...**



 Last modified 1mo ago

# ORGANIZATIONAL MATTERS

- **Complete your profile in the Mattermost chat with your full name and a photo.**
- **Please write us if you will not go on with the course!**

# ATTENDANCE REGISTRATION

## In Presence:

- Scan the QR-Code if you participate in presence

## Online:

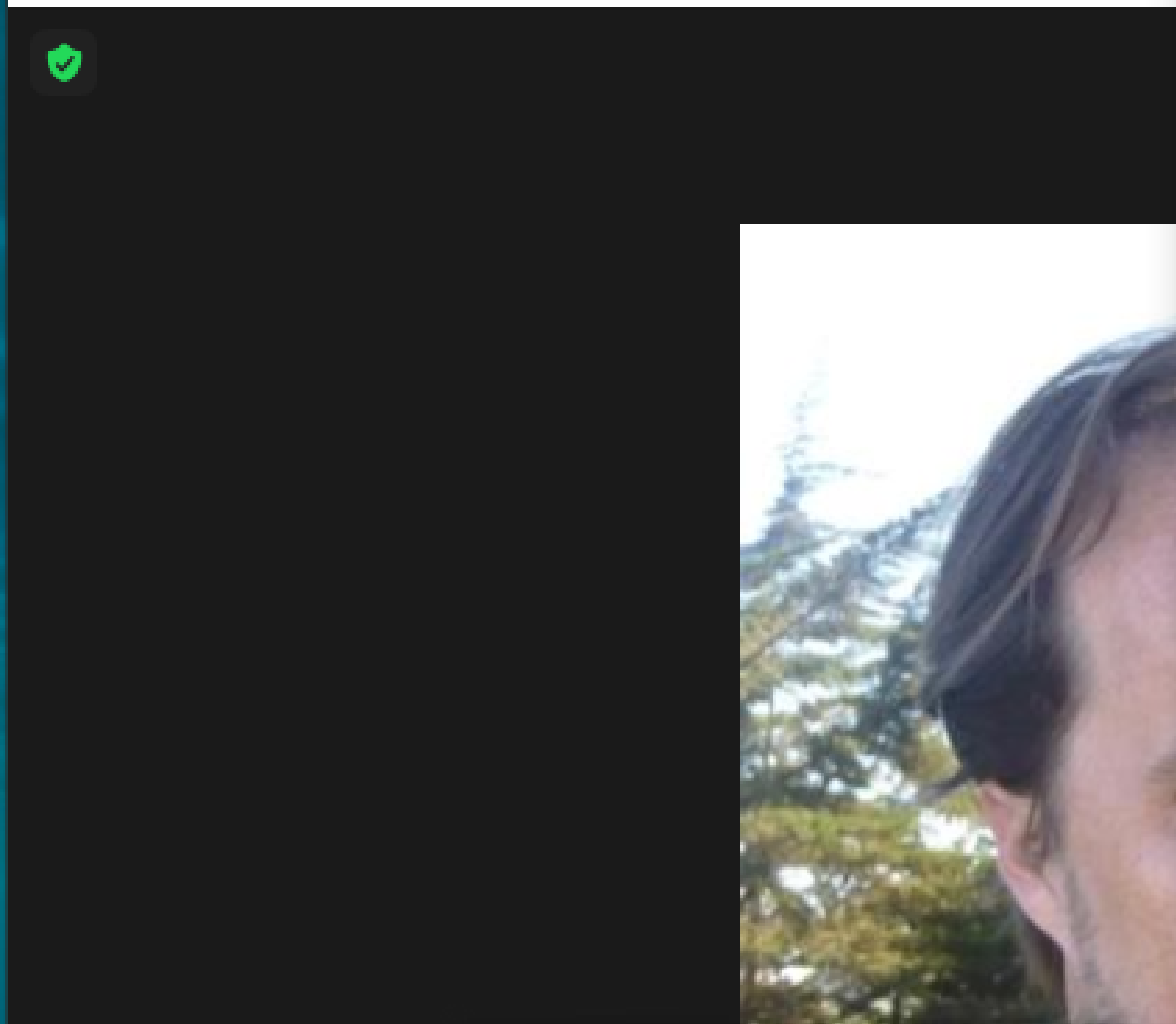
- **Use your full names in the zoom meetings!**
- **Only counts as attended with camera on.**



# ZOOM

- Try the different viewing modes:
  - Gallery View/ Active Speaker
  - Split Screen/ Full Screen Mode
- Maybe watch this video to get an idea:  
<https://www.youtube.com/watch?v=v3IPAbpVjd4>

Zoom Meeting



Select a Camera (Alt+N to switch)

NewTek NDI Video

✓ Integrated Camera

Choose Virtual Background...

Choose Video Filter...

Video Settings...

Steffen Brandt



Mute



Start Video



Security



Participants 1

Settings

General

Video

Audio

Share Screen

Chat

Background & Filters

Recording

Profile

Statistics

Keyboard Shortcuts

Accessibility

Window size when screen sharing:

☐ Fullscreen mode

☐ Maximize window

☒ Maintain current size

☒ Scale to fit shared content to Zoom window

☐ Show my Zoom Windows to other participants when I am screen sharing

☐ Enable the remote control of all applications

☒ Side-by-side mode

☒ Silence system notifications when sharing desktop

When I share my screen in a meeting

☐ Automatically share desktop

☒ Show all sharing options

When I share directly to a Zoom Room

☒ Automatically share desktop

☐ Show all sharing options



Advanced

25.10.2023	18:15 ▾	20:00 ▾	Intro + Organisation	Zoom-Link x +	+	
01.11.2023	18:15 ▾	20:00 ▾	Forecasting basics with trends: AR + MA-models	Zoom-Link x +	+	
08.11.2023	18:15 ▾	20:00 ▾	Covering seasonality: From ARMA to SARIMA-moc	Zoom-Link x +	+	
15.11.2023	18:15 ▾	20:00 ▾	Towards multidimensional settings: SARIMAX + V/	Zoom-Link x +	+	
22.11.2023	18:15 ▾	20:00 ▾	Extended model classes: GARCH + DCC-GARCH + I	Zoom-Link x +	+	
29.11.2023	18:15 ▾	20:00 ▾	Spectral Analysis of Time Series	Zoom-Link x +	+	
06.12.2023	18:15 ▾	20:00 ▾	Milestone Meeting	Zoom-Link x +	+	
13.12.2023	18:15 ▾	20:00 ▾	Supervised Learning I: Trees + Random Forests +	Zoom-Link x +	+	
20.12.2023	18:15 ▾	20:00 ▾	Supervised Learning II: XGBoost + LightGBM + Cε	Zoom-Link x +	+	
03.01.2024	18:15 ▾	20:00 ▾	Neural Networks for Sequences: RNNs + GRUs + L	Zoom-Link x +	+	
10.01.2024	18:15 ▾	20:00 ▾	Prophet(Facebook) + DeepAR/DeepGPVAR(Amazc	Zoom-Link x +	+	
17.01.2024	18:15 ▾	20:00 ▾	Transformers + TFTs	Zoom-Link x +	+	
24.01.2024	18:15 ▾	20:00 ▾	NBEATS(s) + NHITS(x)	Zoom-Link x +	+	
31.01.2024	18:15 ▾	20:00 ▾	Presentations	Zoom-Link x +	+	

# COURSERA REGISTRATION


# DO NOT SIGN UP FOR THE SPECIALIZATION

[For Individuals](#) [For Businesses](#) [For Universities](#) [For Governments](#)


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## DeepLearning.AI TensorFlow Developer Professional Certificate

 Taught in English | [8 languages available](#) | Some content may not be translated

 Instructor: [Laurence Moroney](#)

 [Financial aid available](#)

**186,170** already enrolled

[About](#) [Outcomes](#) [Courses](#) [Testimonials](#)

### Professional Certificate - 4 course series

Earn a career credential that demonstrates your expertise

---

**4.7** ★ (20.734 reviews)


**Intermediate level**  
No previous experience necessary

**2 months at 10 hours a week**

**Flexible schedule**  
Learn at your own pace

---

[View all courses](#)





# CLICK ON THE INDIVIDUAL COURSE

## Professional Certificate - 4 course series

TensorFlow is one of the most in-demand and popular open-source deep learning frameworks available today. The DeepLearning.AI TensorFlow Developer Professional Certificate program teaches you applied machine learning skills with TensorFlow so you can build and train powerful models.

[Read more](#)

### Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning

[Course details](#) ^

Course 1 • 17 hours • 4.8 ★ (18,883 ratings)

#### What you'll learn

- ✓ Learn best practices for using TensorFlow, a popular open-source machine learning framework
- ✓ Build a basic neural network in TensorFlow
- ✓ Train a neural network for a computer vision application
- ✓ Understand how to use convolutions to improve your neural network

#### Skills you'll gain

Computer Vision

Tensorflow

Machine Learning

### Convolutional Neural Networks in TensorFlow



Course 2 • 16 hours • 4.7 ★ (7,912 ratings)

#### Instructor



**Laurence Moroney**

DeepLearning.AI

15 Courses • 456,481 learners

#### Offered by





**DeepLearning.AI**

[Learn more](#)


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## Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning

This course is part of [DeepLearning.AI TensorFlow Developer Professional Certificate](#)

🗣️ Taught in English | [8 languages available](#) | Some content may not be translated

 Instructor: [Laurence Moroney](#)

**Enroll for Free**  
Starts Oct 20


Financial aid available


**350,206** already enrolled

### Course

Gain insight into a topic and learn the fundamentals

---

**4.8** ★ (18.883 reviews) |  96%

**Intermediate level**  
Recommended experience 

**17 hours (approximately)**

**Flexible schedule**  
Learn at your own pace

---

[View course modules](#)

# SELECT AUDIT MODUS

The screenshot shows the Coursera website interface. At the top, there are navigation links: "For Individuals", "For Businesses", "For Universities", and "For Governments". Below this is the Coursera logo and a search bar with the placeholder text "What do you want to learn?". To the right of the search bar are links for "Online Degrees", "Find your New Career", a language selector set to "English", a notification bell, and a user profile for "Steffen als Student".

The main content area displays the course "Stanford Supervised Machine Learning: Regression and Classification". It includes a breadcrumb trail: "Browse > Data Science > Machine Learning". The course description states it is part of the "Machine Learning Specialization". It is taught in English, with 8 languages available. The instructors are Andrew Ng and 3 others, with Andrew Ng being a "Top Instructor". A blue button says "Enroll for Free Starts Oct 20". Below this, it says "454,312 already enrolled".

A modal window titled "7-day Free Trial" is open in the center. It lists the benefits of the trial:

- ✓ **Unlimited access to all courses in the Specialization**  
Watch lectures, try assignments, participate in discussion forums, and more.
- ✓ **Cancel anytime.**  
No penalties - simply cancel before the trial ends if it's not right for you.
- ✓ **€45 per month to continue learning after trial ends.**  
Go as fast as you can - the faster you go, the more you save.
- ✓ **Certificate when you complete.**  
Share on your resume, LinkedIn, and CV.

A blue button labeled "Start Free Trial" is at the bottom of the modal. Below the modal, on the course page, there is a link that says "Audit the course". A red arrow points to this link.

# EXERCISES

- Each week two to four of you will present the exercises given in the course handbook
- Each of you presents at least once

EXERCISES:  
WHO WILL PRESENT NEXT WEEK?



# PROJECTS

Option 1:

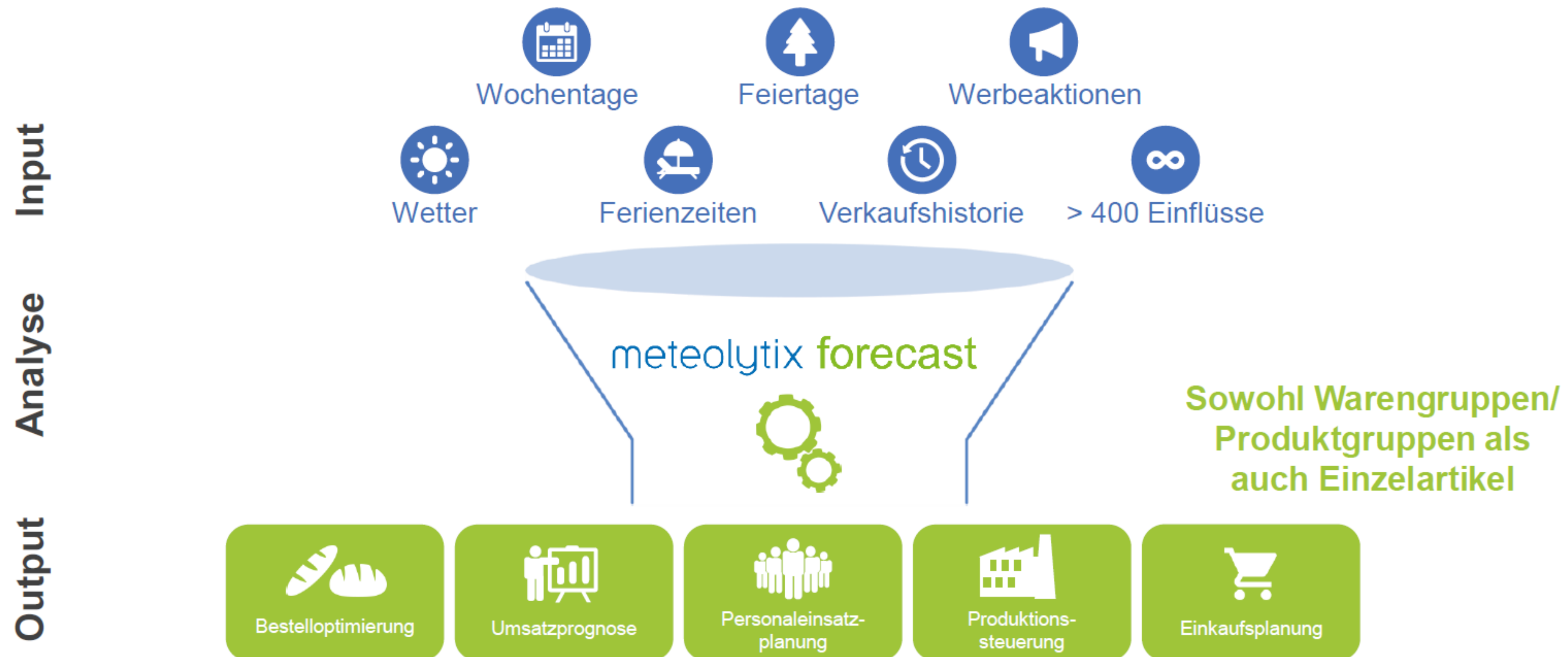
Bring your own idea and data

Option 2:

Do the default project

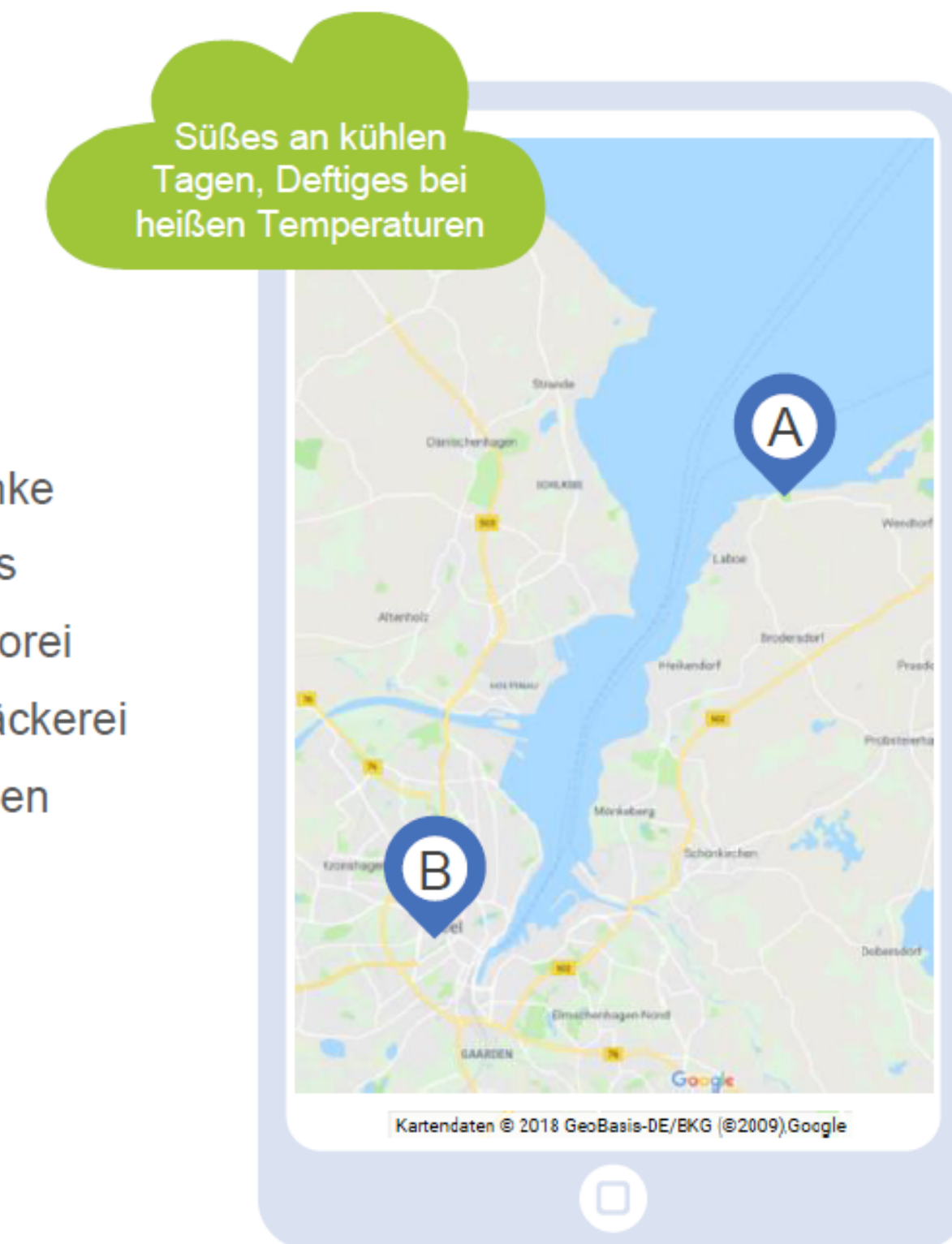
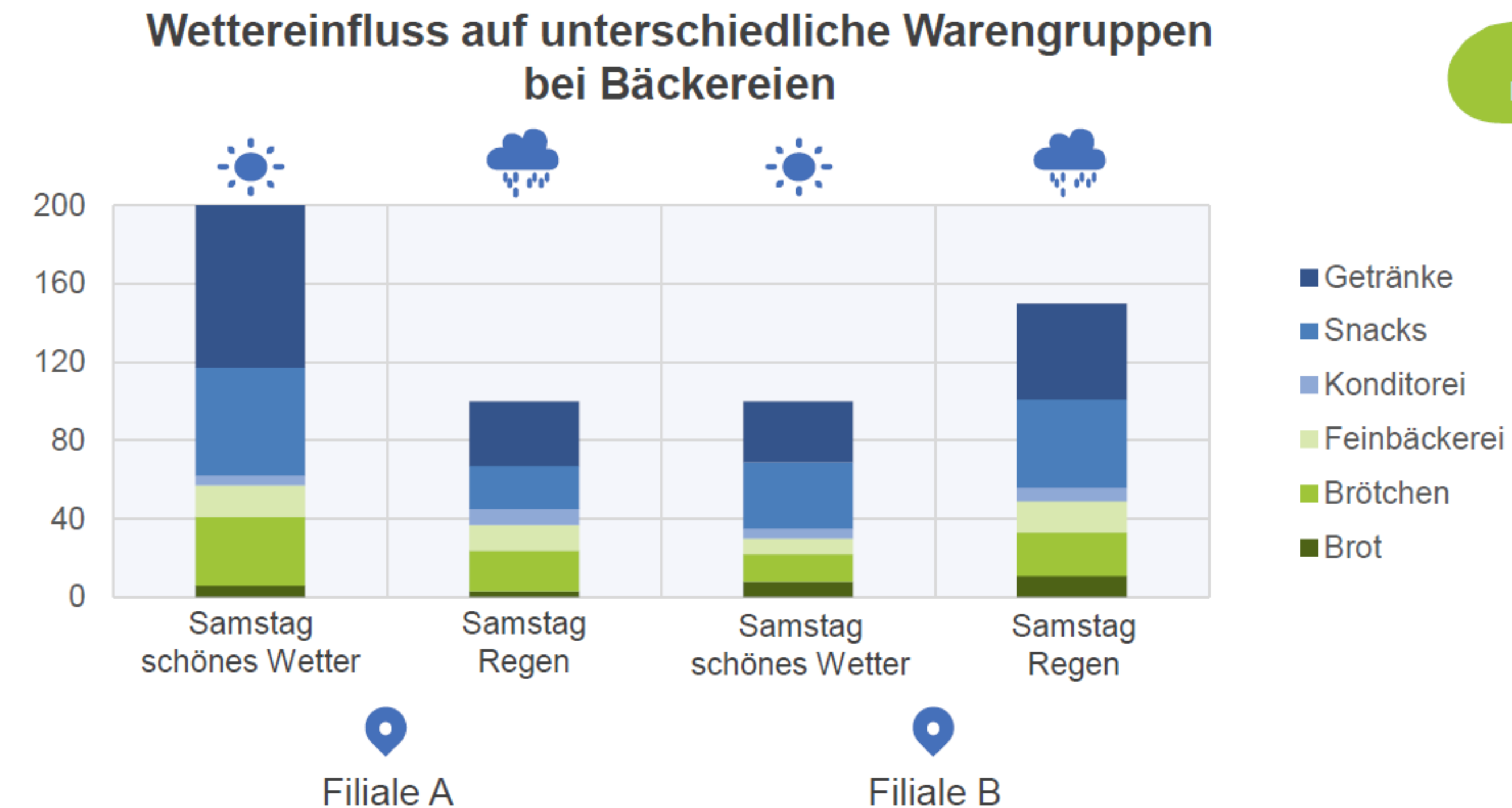
*meteolytix forecast* analysiert die Datenzusammenhänge von mehr als 400 Einflussfaktoren und liefert Absatzprognosen für viele Einsatzfelder.

WAS WIR MACHEN



Die Stärke des Wettereffekts variiert von Ort zu Ort und wird jeweils filialindividuell berücksichtigt.

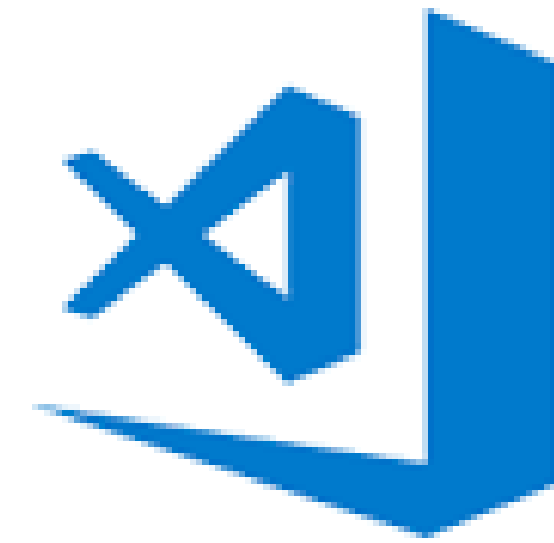
WAS WIR MACHEN



# DEVELOPMENT ENVIRONMENTS



Google Colaboratory



Visual Studio Code

