Prototyping Data Science Products Seminar

Syllabus
Fall Semester

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1. QUICK OVERVIEW

Instructors:

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Office hours by appointment.

Type:

Seminar

Target Audience:

Master students assigned to the "Wahlpflichtbereich" BWL 4.

Master students assigned to the Minor in Marketing.

Frequency:

Fall semester.

APS (ECTS):

3

Workload Statement:

Part	Workload	ECTS
Class attendance (meetings)	15h	
Individual work and assignments	20h	
Group work	50h	
Final Presentation	5h	
Total	90h	3

Maximum Number of Students:

20

Content:

The seminar gives an overview of the fundamental steps needed to create a product proto-type for a data science web application. Topics include getting familiar with google cloud computing platform, training machine learning algorithms, structuring a project and running it on the cloud. Most services we discuss provide a high-level, user friendly (often graphical) interface. Therefore, no previous knowledge of cloud infrastructure is required. Further-more, the students can decide if they would like to code in R or Python.

Language:
English

Prerequisites:

Good programming knowledge in R or Python (at student's choice).

Basic knowledge of data analysis and machine learning (e.g., data visualization, basic statistics, regression models).

Course Number:

03SMMOEC0593 Seminar

Registration:

Please see the respective information in the VVZ.

Grading:

Individual online exercises, group work, written documentation, group presentation and peer evaluation.

Location:

Please see the respective information posted on our website and in the VVZ.

Note:

This information in the syllabus supports the official information in the electronic university calendar (VVZ – Vorlesungsverzeichnis). In cases of doubt, the official information at the VVZ is valid.

2. COURSE CONTENT

2.1 In-class meetings overview*

- **(M1) Sep 21st, 2022, 16-20h**
  Kick-Off meeting & Fundamentals of product prototyping

- **(M2) Sep., 28th, 2022, 16-20h**
  Running a product prototype on the cloud & Group project assignment

- **(M3) Oct., 19th, 2022, 16-20h**
  Status update

- **(M4) Nov., 2nd, 2022, 16-20h**
  Individual meetings with the groups

- **(M5) Nov., 30th, 2022, 16-20h**
  Final presentations

2.2 Details of Classes

(*) This is the preliminary outline for HS 2023. This is subject to change.

M1: Kick-Off meeting & Fundamentals of product prototyping

Objectives:

(1) Introduction to the seminar (class agenda and overview)
(2) Presentation of the case study
(3) Fundamentals of product prototyping
(4) Assignment of individual work

Before the lecture:

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During the lecture:

In this first meeting, we'll get together for the very first time. We'll start with a short intro-duction of the main idea, objectives and organization of the seminar, followed by an overview of the specific case study we are tackling this seminar and the product prototype you will develop. We'll then discuss what it takes to build a product prototype and show you how you can build up these skills in the upcoming weeks through a set of online exercises on *Datacamp.*

After the lecture:

Work on the Datacamp assignments.

M2: Running a product prototype on the cloud & Group project assignment
Objectives:

(1) Detailed project description.

(2) Practical session: Learn how to run a product prototype live on the cloud.

(3) Short introduction to good coding practices.

(4) Group project assignment and workload division.

Before the lecture:

Book the seminar using the Modulbuchung tool. This is compulsory in order to receive the ECTS credits for the seminar. After you booked the seminar, send us an email to request your coupon for using the Google Cloud computing platform.

During the lecture:

We will discuss in detail the case study and we will break it down into small steps. We will then have a practical session, where you get to run your first HelloWorld application on Google Cloud. We will then spend some time discussing what are good coding practices and conclude with the group assignment and some tips on how to divide the work.

After the lecture:

Each group develops an action plan (including role distributions, time estimation, milestones) and starts working on the product prototype.

M3: Status update

Objectives:

(1) Discuss the current action plan and the intermediate results.

(2) Discuss in detail what needs to be handed in for grading (slides, code, documentation) and how the materials should be structured.

Before the lecture:

Each group is required to submit in advance a presentation about their project planning (e.g., working plan, milestones, time estimation and role distribution within the group) and an overview of the steps taken so far.

During the lecture:

Each group will present in 20 minutes their status and the instructors and the students in the other groups will give feedback. The objective is that by the end of this session, groups will refine their action plan for the remaining time period, such that the product prototype can be ready until the deadline.

After the presentations, we will discuss in detail what materials need to be handed in for grading and how they should be structured. This includes the presentation slides, the code and the documentation.

After the lecture:

Groups work on further developing the product prototype. Lectures will be available over email to answers questions that might come up in the process.

M4: Individual meetings with the groups

Objectives:

(1) Discuss the progress with the instructors.

(2) Ensure groups are on the right track to finish the product prototype in time.

Before the lecture:

Groups work on the product prototype.

During the lecture:

Groups discuss with the instructors their progress and any problems that might have come up.

After the lecture:

Groups finalize the product prototype, clean the code, write the documentation and prepare the presentation slides. All materials need to be sent to the instructors before the day of the final presentations, as specified in the kick-off slides.

M5: Final presentations

Objectives:

(1) Group presentation of the product prototypes developed.

Before the lecture:

All groups must finalize the product prototype and submit in advance the presentation slides, code and documentation according to the structure provided in M3.

During the lecture

Each group presents an overview of their work and the makes a demo of the prototype they have developed. After the demo, the instructors and the students in the other groups test the prototype, ask questions and make suggestions.

After the lecture

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4. EVALUATION

Online Exercises on Datacamp (30%)

Group Project (including final presentation and documentation) (60%)

Peer evaluation (10%)

5. ACADEMIC FRAUD

Academic fraud is an act by a student, which may result in a false academic evaluation of that student or of another student. The Honor Code of the University of Zurich applies to all work in this course and will be strictly enforced. The intent of the Honor Code in this course is to ensure that each student claims and receives credits for his/her own efforts. Violations to this are considered academic fraud.

6. ADMINISTRATIVE COMMENTS

6.1 Students with Disabilities

Any student with a documented disability needing academic adjustment or accommodations is requested to speak with the instructor of this course during the first day of the course. All discussion will remain confidential. Students with disabilities will need to also contact the directors of the school.

6.2 Getting in Contact

Emails should be short and to the point. Before sending an email it should be clarified that email is the right medium for the question or concern at hand. Questions can also be asked at the beginning of or during lectures and exercises. Emails should be first sent to the TAs.

6.3 Sound-emitting Devices

It is expected that everybody turns off/mute all devices that emit sounds and noises that may interrupt the class (e.g., mobile phones, pagers, watch alarms). If an occasion arises, in which a student may need to receive a phone call, he or she has to inform the lecturer or teaching assistant before class.

6.4 Important Deadlines and Class Schedule

Important deadlines and the class schedule are communicated in the first lecture. If a student cannot participate in this lecture, it is his/her duty to obtain any relevant information.

We are very much looking forward to meeting you in class!