

Personal Development Report



Introduction

As a software engineer every day is a new challenge. When I started out with this study, I had no idea what I would be able to achieve. After struggling to find my path in technology, I made the switch to software. This has been a great decision because I feel more motivated than ever. Semester 3 especially has been an experience which I am proud of. Learning new tools and applying them with success is something that I never get tired of. I am eager to step out of my comfort zone and explore new challenges that require thinking on a scientific level.

This semester I look to improve my research abilities and outside of the box thinking capabilities. Translating complex analytical problems into easy-to-understand concepts. Thinking more and more about the benefits of artificial intelligence in daily scenarios interests me a lot.

During my upcoming years in this study, I plan on following the master program. As I want to further develop my intellectual skills with this subject.

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1: Data Preparation

You can **prepare** and **store** a given dataset in such a way that it can be used in your data analysis and/or modelling.

Clarification

Preparing a dataset consists of extending it with additional data and cleaning the data according to theories of data quality, in such a way that the process of cleaning and preparing those data is repeatable, transparent to others, and the results are suitable for data analysis and/or modelling.

Storing a dataset includes investigating cloud solutions and arguing whether they should be used.

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4th Evaluation: week 6 (06/10/2021)

Furtherly improving on my research capabilities within the challenge and exercises. Getting data ready from various sources ready for interpretation. Displaying the basics and clearly showing the ins and outs of the dataset before it is ready for use.

No feedback received yet

Self-Assessment: Beginning

Finding a certain workflow and further improving upon this has worked up to now. Listening to the feedback and applying this while continuing with exercises.

3rd Evaluation: week 3 (16/09/2021)

After getting feedback on the Eindhoven parking exercise, I continued to improve on my data visualization. This turned out well. Finding new tools for displaying data and playing around with it just to get a better understanding and maybe see underlying secrets.

In general this looks as a good first try, and if you want to improve it, take care for structure and justification of your research.

Huisman, José J.A.T.M. , 16 Sep at 13:21

Self-Assessment: Orienting

I am used to a different way of working. Slowly I am understanding more of the expected results and ways to interpret data.

2nd Evaluation: week 2 (09/09/2021)

After getting a better understanding of the workflow during an exercise I attempted the Eindhoven parking case. Working through the exercise, treating, and analyzing the data. After which I plotted the results in a graph. To further give a better display, I used a program called Mapbox. I imported my data and displayed it on an actual map of Eindhoven. Finally, I used a web-api to import data ready for treatment and analysis.

Self-Assessment: Orienting

Using more tools to my disposal is a great mindset which I developed during the work with this exercise. Still, I haven't even scratched the surface when it comes to available tools, that's why I am still orienting.

1st Evaluation: week 1 (02/09/2021)

Checking the Boston Housing Analysis data on any nullable datapoints, outliers or correlated features that can have an impact on the accuracy of the model. For instance, using Pearson Correlation and displaying the results in a heatmap.

No feedback received

Self-Assessment: Orienting

When working on the exercise I frequently looked up methods and terms. I applied this new knowledge and managed to prepare data for the training of a machine learning algorithm.

2: Data Analysis & Model Engineering

You can **apply** machine learning algorithms and **other data analysis techniques** to a prepared dataset.

Clarification

Applying consists of optimizing the training of a model using model tuning and grid search, and evaluating the results with respect to recall, precision, accuracy, cross-validation, etc.

Other data analysis techniques are for example: descriptive statistics, derived columns, forecasting, trend analysis, clustering, etc.

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3rd Evaluation: Week 4 (20/09/2021)

Greatly improving on my research capabilities and application of machine learning algorithms with the 'Time Series Forecasting' exercise. This has helped me to get a better understanding of a concept within machine learning.

Hi Mateusz. You learned a great deal from this exercise. Regarding the min temp dataset, it is important to do some resampling (e.g. average per week). This can be easily done. In fact, it is done in the example Jupiter notebook for Time Series. Please have a look at that.

Kuijpers, Nico
N.H.L., 20 Sep at
16:13

With this exercise you show that your are 'beginning' regarding Time Series.

Self-Assessment: Beginning

The original goal was to use this knowledge in my challenge. But bitcoin forecasting was not appropriate for phase 1 and 2 so I switched the topic. Still, it helped me with displaying data and getting information from the algorithms. A lot of setting up was required for this exercise.

2nd Evaluation: Week 2 (07/09/2021)

With the knowledge from the Boston Housing exercise, I started working on the Titanic case. Treating the data and applying several machine learning algorithms, I selected the most optimal solution comparing R² scores. Finally, I applied One-Hot-Encoding on the Random Forest algorithm to check for differences in model accuracy.

Nice work. We have had a discussion about this exercise. You show that you are 'orienting' in the field of machine learning.

Kuijpers, Nico N.H.L., 13 Sep at 9:56

Self-Assessment: Orienting

With the experience from the first exercise, it was a lot easier to get working on the Titanic. My understanding of core concept has increased, but I still made some mistakes concerning the algorithms which I chose. After the lecture about *Linear Regression* my understanding of the topic has increased greatly because of the direct comparison within the lecture.

1st Evaluation: week 1 (02/09/2021)

The Boston Housing exercise was a great practice. I learned to analyze and prepare data so that it can be used in a machine learning algorithm.

Nice start with machine learning. I can see that you learned from this exercise. You show that you are 'orienting' in the area of machine learning. Good luck with Titanic!

Kuijpers, Nico N.H.L.,
13 Sep at 9:42

Self-Assessment: Orienting

While working on this exercise a lot of new terms are used. I often research these to get a better understanding. Applying these technicalities is something that will take a lot of practice. I am orienting heavily with this subject and experimenting with exercises is one of the main ways to learn for me.

3. Reliability and Transparency

You can address **reliability** and **transparency** aspects during data analysis and/or modelling.

Clarification

Reliable means that conclusions are supported by methodologically acquired and evaluated results, recommendations make sense regarding the domain knowledge, and used sources are referenced appropriately.

Transparent refers to the process being clear to such a degree that it is reproducible, results being explainable to humans and based on decision making that is considered fair, whilst eliminating bias.

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1st Evaluation: week 3 (13/09/2021)

Putting a lot of work into my jupyter notebooks so every detail is clear to any new reader. Furthermore, it must be clear for me. Every subject is unknown territory for me. So, getting a good understanding in the beginning might have a great impact in the end. Every method, function and parameter are reviewed and tested in different circumstances.

FEEDBACK

Self-Assessment: Orienting

Of course, it is only the 3rd week of this course. So, I cannot already have obtained enough experience or even a good enough understanding of these concepts. But by training with them and researching the possibilities I find myself on the orienting scale.

4. Targeted Interaction

You use **appropriate communication** to address your audience considering your role, your audience, and the medium to convey your message regarding the **approach** and **results** of your data analysis and/or modelling.

Clarification

Appropriate communication means reporting and/or presenting the approach, process or outcomes of a data analysis in a methodologically sound way. You can reflect on the effect of your communication and based on that reflection you define steppingstones ahead on the task, on the role and on the projected results.

Interaction about data analysis is based on a systematic **approach** (such as the IBM Data Science Methodology) and comprises 4 phases/components: 1) project proposal 2) data preparation 3) data analysis/modelling 4) results and evaluation.

Based on your message, your position and the person(s) you address, you choose the right channel and format to communicate **results**, including appropriate data visualizations (such as data stories, infographics, or (a set of) static or interactive plot(s)).

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1st Evaluation: week 3 (13/09/2021)

Actively making exercises has put me in the position to train with each of the phases. Jupyter notebooks have explanatory text and are written in an understandable manner for readers of each level. Discussing results with teachers and keeping an open mind while staying critical.

FEEDBACK

Self-Assessment: Orienting

By performing general exercises, I have practiced with most phases and am orienting further in the possibilities within each phase. During the upcoming weeks I will have gathered more experience and knowledge.

5. Future Orientation

You can **assess the context** of data analysis and/or modelling from **multiple perspectives** to pursue this project in a sustainable manner.

Clarification

Assess the context means the organizational and societal environment in which the data analysis project takes place. You show that you can identify the hallmarks and roles of the environment of the assignment and have a keen eye for a future-oriented, sustainable embedding of your work in an organization and society.

Multiple perspectives include social and ethical considerations, law compliance, organizational data maturity, alignment with sustainable development goals, recognizing own boundaries and those of others and acting accordingly. Reflecting on ethics and governance of AI-based automated decision-making will be an important and integral part of your learning process.

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1st Evaluation: Week 6 (07/09/2021)

Making use of the TICT tool for both my challenge and the group project I learned how to think about various aspects when it comes to sustainability and the impact on civilization. Beforehand I would never take these into account. It was eye opening how many aspects can be considered. Understanding that there is more to the topic of artificial intelligence than just gathering data and coming up with something interesting has made me think different regarding this subject.

Self-Assessment: Orienting

Not making previous use of these concepts has created a certain mindset for me. Getting out of that zone and exploring further possibilities puts me in an orienting position.

6. Investigative Problem Solving

You can critically consider a data analysis and/or modelling project from various perspectives, **identifying problems**, finding an **effective approach**, and coming up with appropriate solutions.

Clarification

Identifying the problem means you can formulate a clear hypothesis and research question to determine the aim of solution using an inquiring mindset. **Effective approach** means you compose and pursue applied research methods (such as the DOT framework) and approaches based on reliable and verifiable sources. You can methodically and creatively find answers to applied research questions, considering alternatives, and critically analyzing your own and others' line of reasoning.

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1st Evaluation: week 5 (29/09/2021)

By changing the topic of my first challenge to something that is more complex and consists of multiple parts I tried to take a different approach to coming up with a solution for an existing problem. Domain understanding plays a big role. Making use of the TICT also gave me better understanding of core concepts that need to be considered.

No feedback received yet

Self-Assessment: Orienting

7. Personal Leadership

You show an **entrepreneurial mindset** regarding the data analysis and/or modelling project and your personal development, while being aware of your own **learning capacity** and keeping in mind your **professional ambitions** in the field of Artificial Intelligence.

Clarification

Entrepreneurial mindset includes being aware, seeing opportunities and seizing them, motivating oneself and others, being able to profile oneself, a team and others.

Learning capacity means guiding your own development and study progress, showing leadership and taking responsibility, enhancing ones' own learning capacity, demanding and giving active feedback, all with respect to the learning outcomes.

Professional ambitions means you are examining what type of professional you want to be in the long term, which field and type of position you aspire to and how you can stand out from others in field of AI/data.

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2nd Evaluation: week 2 (10/09/2021)

Not sure how to prepare myself for an internship I jumped in the deep. Last Friday I had a talk with Nico, and he recommended me to just try to get into contact with one of the internship contacts. Already knowing what I wanted I looked up the person on LinkedIn and sent a message. I got a referral for the actual person in charge on internships.

"Let's give him the benefit of the doubt"

Hans Konings

(PDR evaluation 1 – 16/09/21)

Self-Assessment: Beginning

Not waiting but working hard towards my goals. I am not going easy on this semester because I know what I want, and I know it takes lots of work to get there. Preparing myself well for the Data Science Master route is one of my main concerns this semester.

1st Evaluation: week 1 (02/09/2021)

Starting from the previous semester I have been taking a different approach to my personal development. I am more outreaching and demanding of myself, but also of others. I am strict on my own results and expect clarity and support from the tutors. I am very active and strive towards becoming better every day.

"It is very good you are being active from the start. Getting a good understanding of all concepts from the beginning is a great advantage"

Nick Welman

(Monday morning startup meeting SI - 06/09/21)

Self-Assessment: Orienting

I am heavily focusing myself on my personal development. There is a lot to learn. But by taking steps and actions towards my goals I am slowly mastering the skills to achieve those dreams. Asking feedback and engaging in conversations in one of my favorite aspects in this field.

8. Internship Preparation

You create chances to acquire and define an internship assignment based on a match between your ambitions, the school's requirements and the field of expertise related to your profile or specialization.

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3rd Evaluation: week 6 (08/10/2021)

This Friday I went to the ICT-job business event in Utrecht. I met with representatives from multiple companies and applied for a selection of them. What I learned most from this event is how to prepare myself for the job application. Getting a better understanding of the process and how to structure my motivational letter and cv.

No feedback received yet

Self-Assessment: Beginning

This event was very helpful for furtherly improving on my connections and investing time to better myself. I updated my papers and started applying for more positions at several companies of interest.

2nd Evaluation: week 2 (10/09/2021)

I have been in contact with a HRM manager from Prodrive Technologies. He referred me towards the internship coordinator from Prodrive. I sent an email with my CV and motivation.



ProdriveInternshipMail.pdf (Command Line)

Self-Assessment: Orienting

Slowly but surely making steps in the professional world. Now I must wait for a response to see what the next step will be.

1st Evaluation: week 1 (02/09/2021)

Last semester I started looking for internship opportunities in the field of IT. I also made a LinkedIn account where I provided crucial information about myself and my skills. I already got into contact with a few recruiters, but I am not sure yet if I will pursue these offers. The next step for me will be creating an online portfolio.

Talking on Friday (10/09/2021) with Nico, he gave me advice to look on the Fontys internship portal. There I could find some more information.

Self-Assessment: Orienting

I Have made a start concerning my internship. I am looking around and preparing myself for the next steps. Some guidance would be nice.