Data

Case study @ *kickstart* AI

👋Hey there!

We're excited to see how you approach this case study! This will give us a better understanding of your work style, project approach, and problem-solving skills. We know there's a lot of information to digest, so don't stress too much about getting all the details right. Also, please don't spend more than 4 hours on this - we respect your time. Feel free to answer in whatever format you prefer!

Context:

In November 2022, Kickstart AI was approached by a large company to help them with their demand forecasting model. The company was struggling with workforce management and unexpected demand spikes, so it needed an accurate and reliable forecasting model. We organized a workshop with the company to fine-tune the problem statement and desired outcomes.

During a challenge, we developed together with the data engineers from that company a reliable demand forecasting model that had a maximum daily deviation of X%, maximum weekly deviation of Y%, and maximum monthly deviation of Z%. The model was designed to be production-ready for the company, with a training dataset, code in a Git repository owned by the company, documentation, and a getting-started guide. We aim for platform-agnostic products and a transferable ML pipeline.

The final result was a working solution at the company and a press release with the results. This met all stakeholder expectations and achieved the desired outcomes of the challenge, including a reliable demand forecasting model.

This case study serves as an example of KickstartAI's commitment to helping organizations solve real-world challenges through AI. However, it doesn't stop here. Now, it's time to focus on productization, a crucial part of our Kickstart AI concept, as it allows the challenge solution to reach a broader audience and have a greater impact. Keep in mind that we'll have 4-5 challenges each year.

Productization at Kickstart AI is the process of turning the challenge solution into a product that can be used by a wider range of organizations in the Netherlands. This involves generalizing the models into a product to make it suitable for various use cases to create as much impact as possible. For this case, we decided to create a tool that can use the learnings from the challenge and be applied within primary schools, as there is a national problem with workforce management in the demand and (un)expected to leave of teachers.

Let's get started!

🧐**Question 1:** Show how you would approach this project. How will you generalize the model to make it suitable for various use cases? What adjustments need to be made? What additional data needs to be collected to train a generalized model for primary schools? How will you collect, process, and validate this data?

🚀**Question 2:** With technical scalability in mind, what kind of support and maintenance would be necessary to ensure the tool remains up-to-date and useful for primary schools over time? What problems do you foresee?

🛤️**Question 3:** How would you ensure that this model is reusable for other (similar) applications? Can you come up with another one (or more)? How would you enhance the system, the model and/or the data to fit it?

Tips

In answering each question, please walk us through your thought process and provide practical outputs. Don't give us abstract answers - we want to know how, why, and even the ugly. You can even make up fictional stuff if that helps you. Think method acting if you want to.

We can’t wait to hear your answers! If you have any questions please feel free to reach out.

Good luck, and have fun!☝️