Human-Computer Interaction - Exercises
Assignment 1: Pitch it!

Daniel Leal & Fabian Gubler

October 2, 2022

-

1 Problem Specification

In the last decade, great breakthroughs have been accomplished in the development of Data Science and Artificial Intelligence related technologies. These developments have not only redefined the kind of problems that can be solved by computers, but also provided solutions available almost entirely online and most oftenopen-source. With an abundance and access to such solutions, their presence across all industries should also match this pace. However, while AI developments keep at break-neck speed, the industry is barely close to harness its full potentials.

In relation to the speed of developments and the technical skills required to manipulate AI models, a lot of businesses and managers shy away from the implementation of such projects. We believe that this existing disparity is fundamentally an interface problem. In particular, we observe a gap between the currently available technology and the typical users' understanding and capabilities.

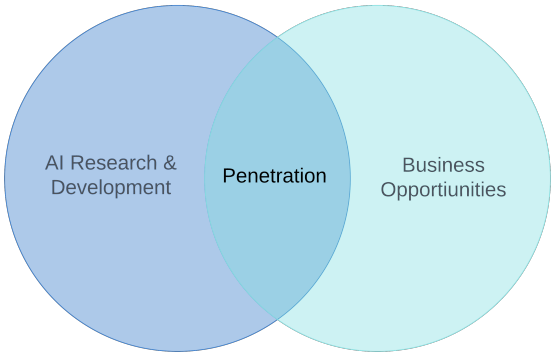

Figure 1: Lack of Data Science Penetration in Industry

Fundamentally, we identified the following barriers as most substantial:

1. High level of technical skills required to know what solutions are possible and appropriate for your data.
2. Explainability of the algorithm to build trust in the solution.
3. Ability to fine-tune algorithms in a way that is intuitive to the business users.
4. Speed of development, being able to produce a POC rapidly and cheaply.

2 Persona

2.1 Brief Description

Marvin Scherer is a SAP/Data Science Consultant at Conactive GmbH. In his work, he focuses on Business Intelligence and Big Data solutions for SAP and non-SAP partners. Marvin assesses existing systems and provides recommendations on possible improvements of these systems. He regularly plays a part in the development of prototypes and the exploration of new approaches of automation and AI.

2.2 Interview

The interview was conducted in a semi-structured manner. The questions focussed on the tasks and goals of an SAP consultant. With the primary focus of AI models, the needs and pain points of potential users were discussed. In more concrete terms, questions were asked on the current challenges of using AI models. This was done with the objective to improve our understanding of the context concerning our value proposition. Additional Insights had been gathered by asking about the needs and frustrations of his clients. Consequently, we could obtain an additional perspective of our target group. Our interview was not conducted in-context. However, the undertaking of contextual interviews were identified to be a promising method appropriate for later stages of the project work.

2.3 Key Statements

Q: Tasks and Goals of his day-to-day activities

- For me, the most important thing is the development of reliable solutions that can be communicated.
- We are usually not using the most sophisticated models, but rather the ones that are proven and easiest to explain.
- The process of understanding the data, business problems, and implementing a solution is usually an extensive one.

Q: Experiences regarding Customer Needs / Expectations on AI Models

- Our clients are extremely interested in unlocking the efficiencies and automated solutions enabled by Artificial Intelligence.
- Clients not interested in the technology, are interested in the solutions AI can build.

Q: Customer Pain points when facing AI Models

- AI algorithms are very difficult to explain.
- I want a product that allows me to develop solutions more quickly while having an interface that makes the process and results to clients transparent.
- Clients usually understand the solution once you have built a prototype. That is when they really come on board.

2.4 Main Insights

- **Behavioral Consideration:** Our candidate seeks a tool where he can directly provide his client with a solution and have the ability to prototype it. Further, he would like the solution to contain an explanation of the possible algorithms that can be used.
- **Alleviate Frustration:** Clients get frustrated when they cannot visualize what they demand. They get lost if a consultant cannot quickly showcase their propositions prior to the engagements.

3 Our Solution

Our platform focuses on creating an interface between business users and AI algorithms. This is accomplished by creating a recommendation system that is able to suggest a specific algorithm for a provided dataset. Further, the platform will focus on showcasing algorithms available to solve specific business problems, and doing so in an intuitive way. Consequently, non-technical users can quickly understand what possible solutions are available and how they may be applied.

Once a user has provided his dataset and chosen an appropriate algorithm, the platform is able to provide immediate feedback showcasing the potential of the model. By showing a dashboard of relevant information, the customer is able to determine the feasibility of his idea. Once the viability is established, a prototype implementation is given to the user, where can interact with model and change it according to his needs. Additionally, the source code for this implementation is available, allowing more technical users to use this as a starting point for their development. In this way, our solution primarily focuses on communicating AI capabilities to our clients in order to create trust using the technology and thus to capiltalize on its benefits.

The following sections contain two mockups to demonstrate our solution.

3.1 Model Search

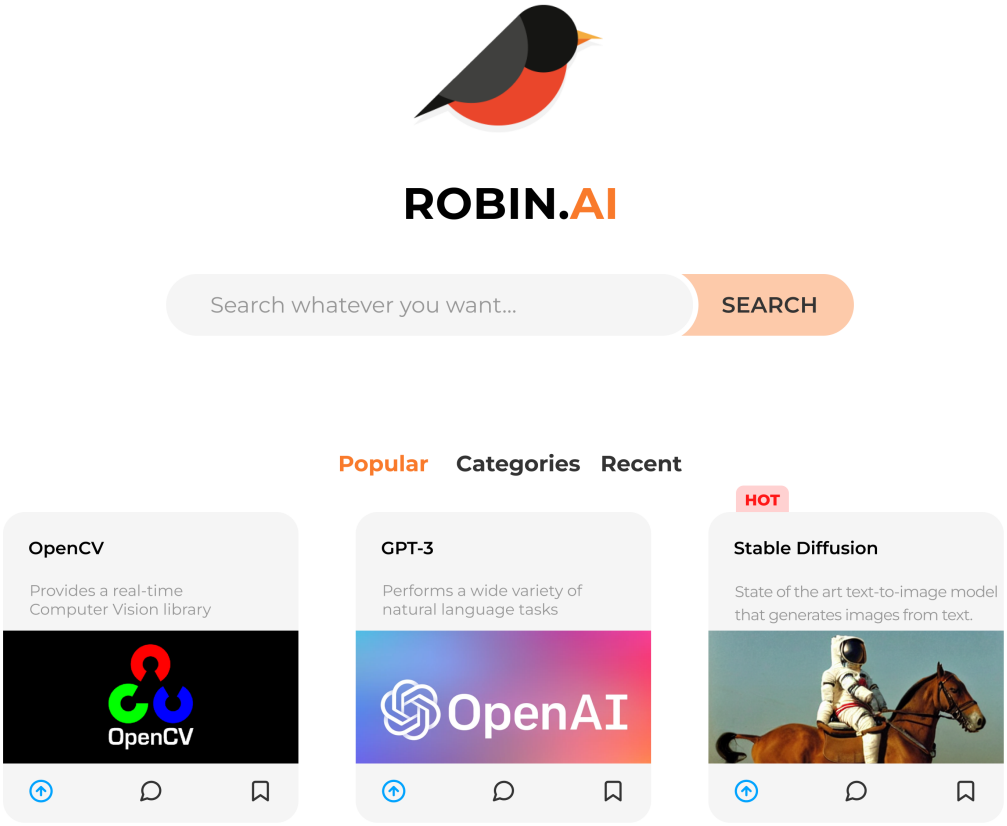

Figure 2: Model Discovery page

- The user either chooses from a preselection of models or enters a search term specific to his current need.
- In a subsequent step, the user decides whether she wants to provide her own data or choose from a variety of suitable datasets.

3.2 Model Dashboard

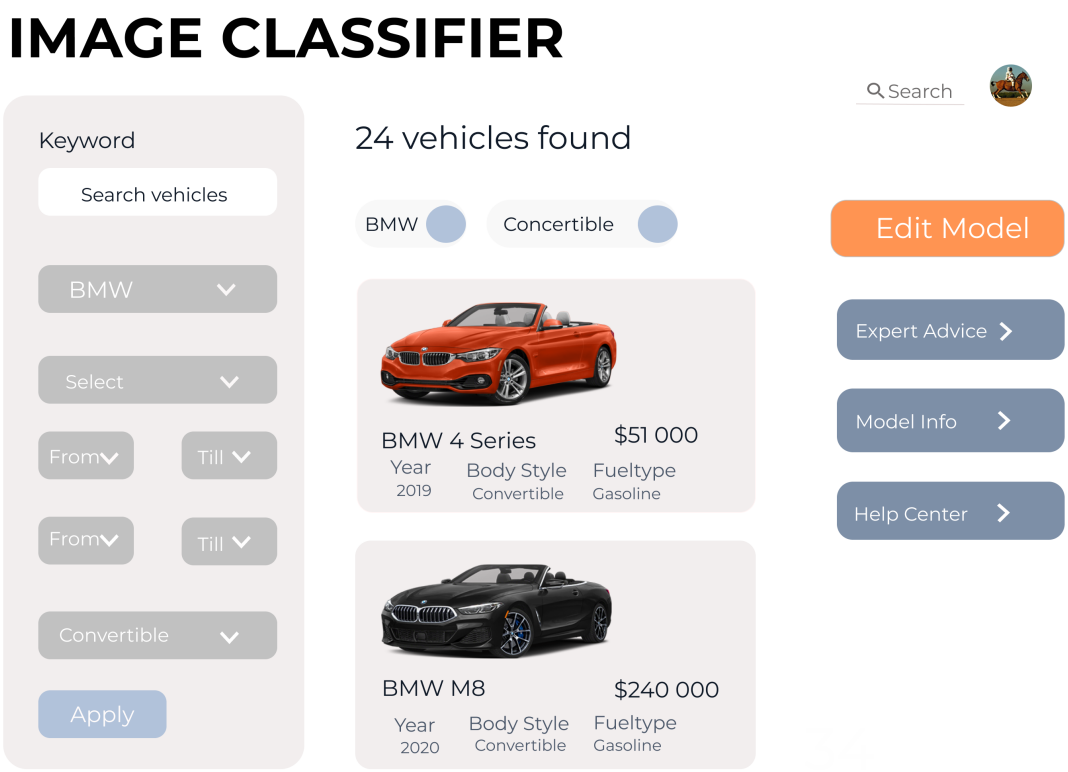

Figure 3: Dashboard using the example of image classification

- The user is presented with an intuitive interface where the potential of the AI model is demonstrated.
- Through the interaction with various parameters, the user obtains an understanding of the feasibility of the corresponding model.