TEK830 Digitalization and AI in practice

SKAPA

The future of product images

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The original problem & interviews

- Interviewed a studio designer and product stylist
- Flexible studios clash with budget limits
- Photo-sessions can be very time-consuming
- Expensive & time consuming
- Cultural relevance adds complexity and cost

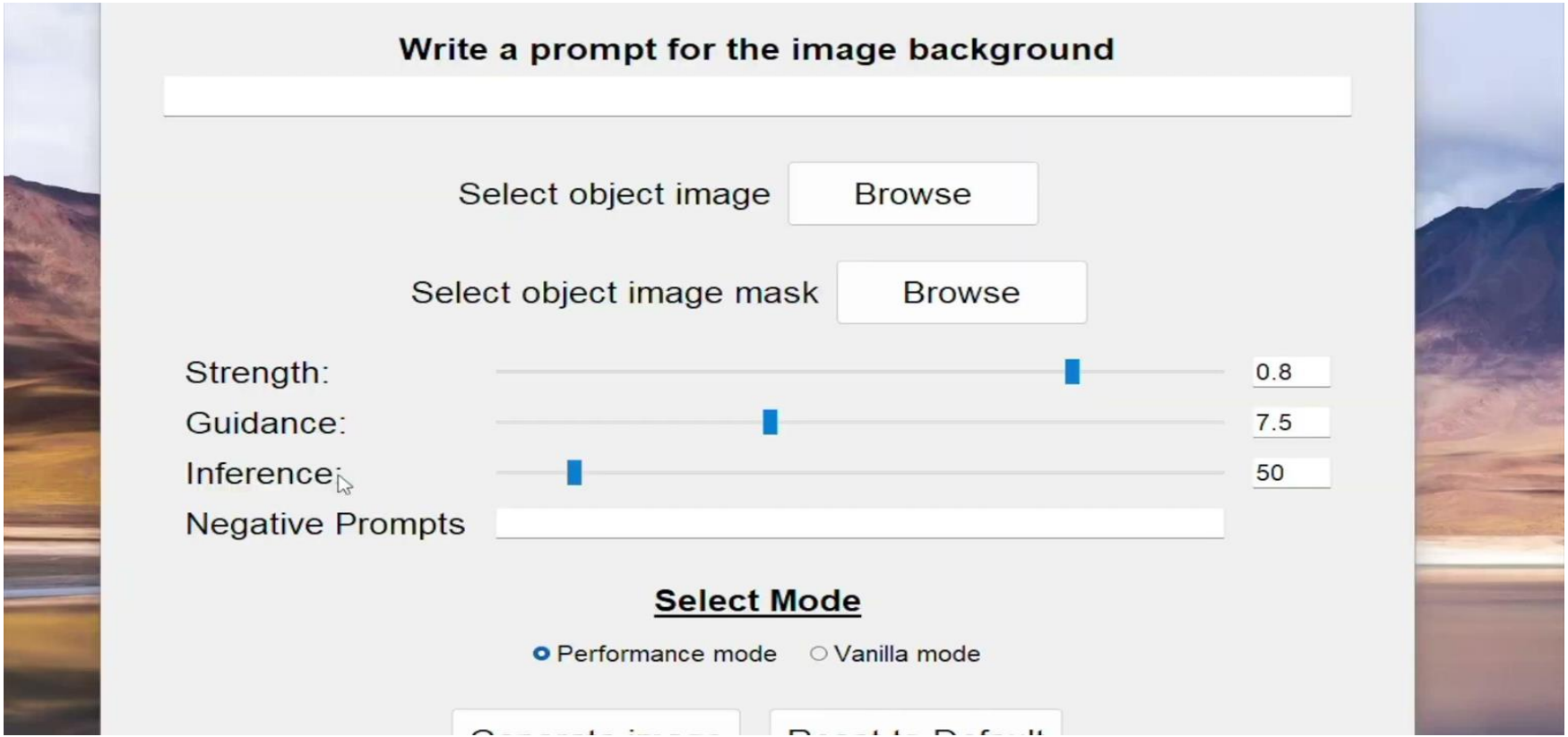
Our target users & purpose

- Developed for the IKEA marketing team
- Eliminates the need for big crews and lengthy development
- Easy to try new sets
- Helps create relevant ads for different regions

Our solution

- Generative AI to create environments
- Stores feedback for images and regions
- Can be further trained based on feedback
- Intuitive GUI for a prompt-engineer

DEMO


Write a prompt for the image background
Select object image
Browse
Select object image mask
Browse
Strength:
0.8
Guidance:
7.5
Inference:
50
Negative Prompts
Select Mode
Performance mode
Vanilla mode

Design Principles

- **Viability**
  - Prioritize accessibility
  - Optimize to make climate positive
- **Feasibility**
  - Incredibly scalable and upgradable
  - Can be maintained and easily and follows the development curve
- **Usability**
  - Easy GUI to use without in-depth knowledge of programming
  - Can be shared in the whole organization

The future of SKAPA

- Rating system to fine-tune our model
- Improve the model

Thank you for your time!

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Appendix A: Usability

This project deals with a very new technology that is difficult to understand without a deep knowledge of software development and AI. The end goal for this project is a product that requires little to no programming skills. That is why we in our research have reached out to people who work in design and marketing and asked what problems they face when creating ads etc. Our way of solving this have been to create a simple and sleek graphical interface that allows users with no prior AI experience to create prompts and generate images that are stored in a database and can be used by other clients.

Appendix B: Feasibility

This product is very scalable and therefore works more as a proof of concept than a finished AI tool as we are limited by factors such time, money and other resources. While the AI model might not be able to compete with the most common models on the market right now, that is something that IKEA very easily can fix with their resources. Our product is similar to a computer in a way. By replacing say a graphical component it is possible to keep using the same computer. The same is true for our product by replacing the AI model. The main cost of this product is the license for the AI itself which is why this product is referred to as a proof of concept.

Appendix C: Viability

We have looked at key values for IKEA and worked a lot towards simplicity and staying relevant in a modern world. AI is very modern technology and have become a huge part of society. We are trying to make that technology more easily accessible for IKEA. IKEA works a lot towards simplicity which is a key element to our product. One sustainability issue that we have talked a lot about is the effect that training AI models have on the climate. training large models requires a lot of energy and our conclusion is that IKEA sits in a position to demand sustainably trained models and try to push in the right direction.

Appendix D: Interview Questions

1. **What do you work with? What is your role?**
2. **Could you describe your workflow?**
   (If your workflow changes frequently, please describe best and worst case scenarios.)
3. **Could you describe a typical set of pictures?**
   (What backgrounds are commonly used?)
4. **What is the most prevalent problem in your workflow?**
   (Please focus on issues related to product pictures, if applicable.)
5. **Would you appreciate an easy-to-use tool that allows the marketing team to write a prompt and generate a background using AI, onto which the product image can be placed, eliminating the need for a physical production set?**

References

- 1. Hage, S., Francl, T., Bardou, E., & Söderqvist, J. (2024). *IKEA X Chalmers Kickoff* [PowerPoint Slides]. Digitalization and AI in practice, Chalmers Tekniska Högskola. September 5.

- 2. Teigland, R., & Heathcote-Fumador, I. (2024). *Design Thinking* [PowerPoint Slides]. Digitalization and AI in practice, Chalmers Tekniska Högskola. September 10.