

How to design AI-decision support?

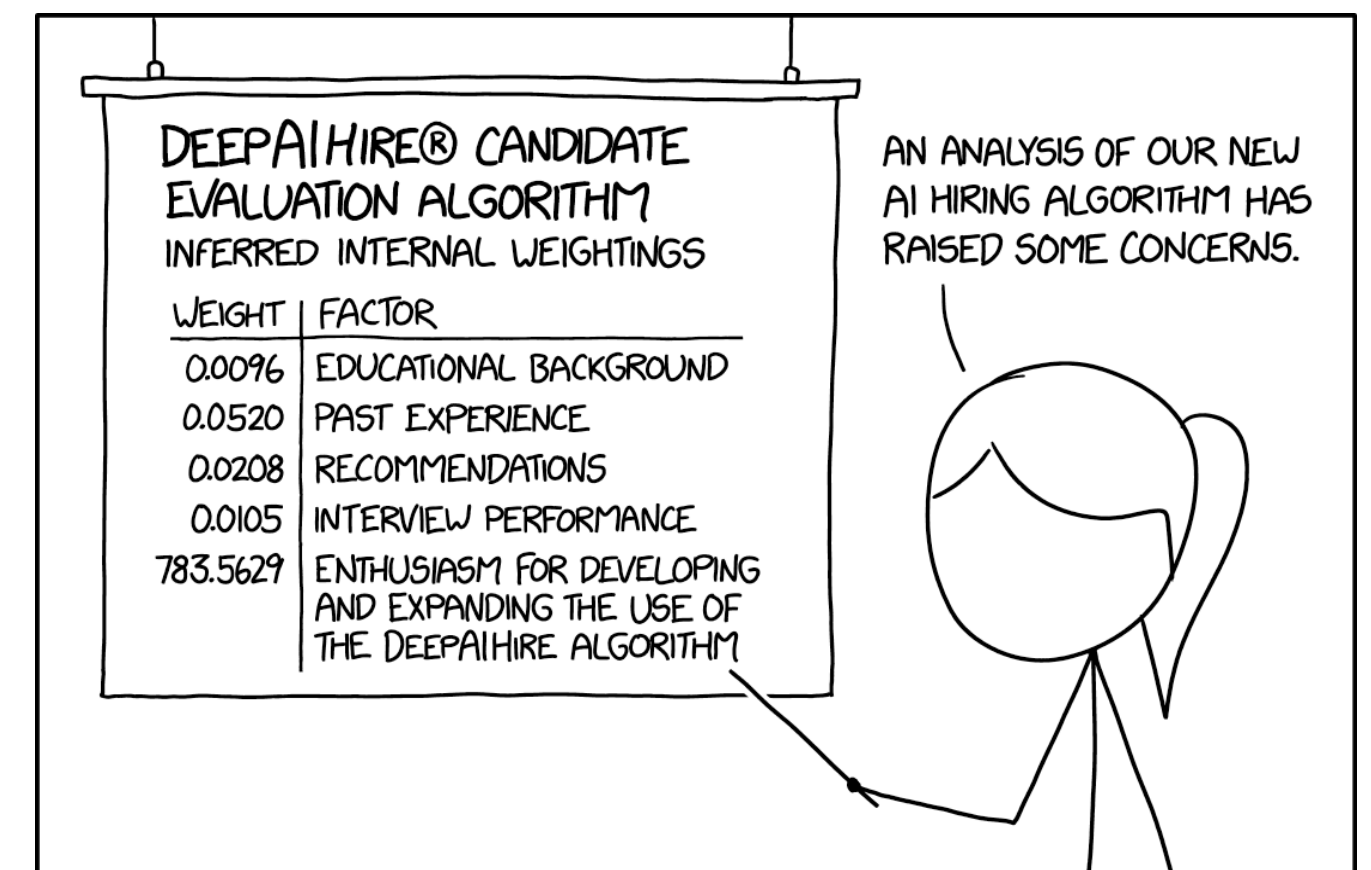
HCI-Outcomes of AI-interventions in decision environments

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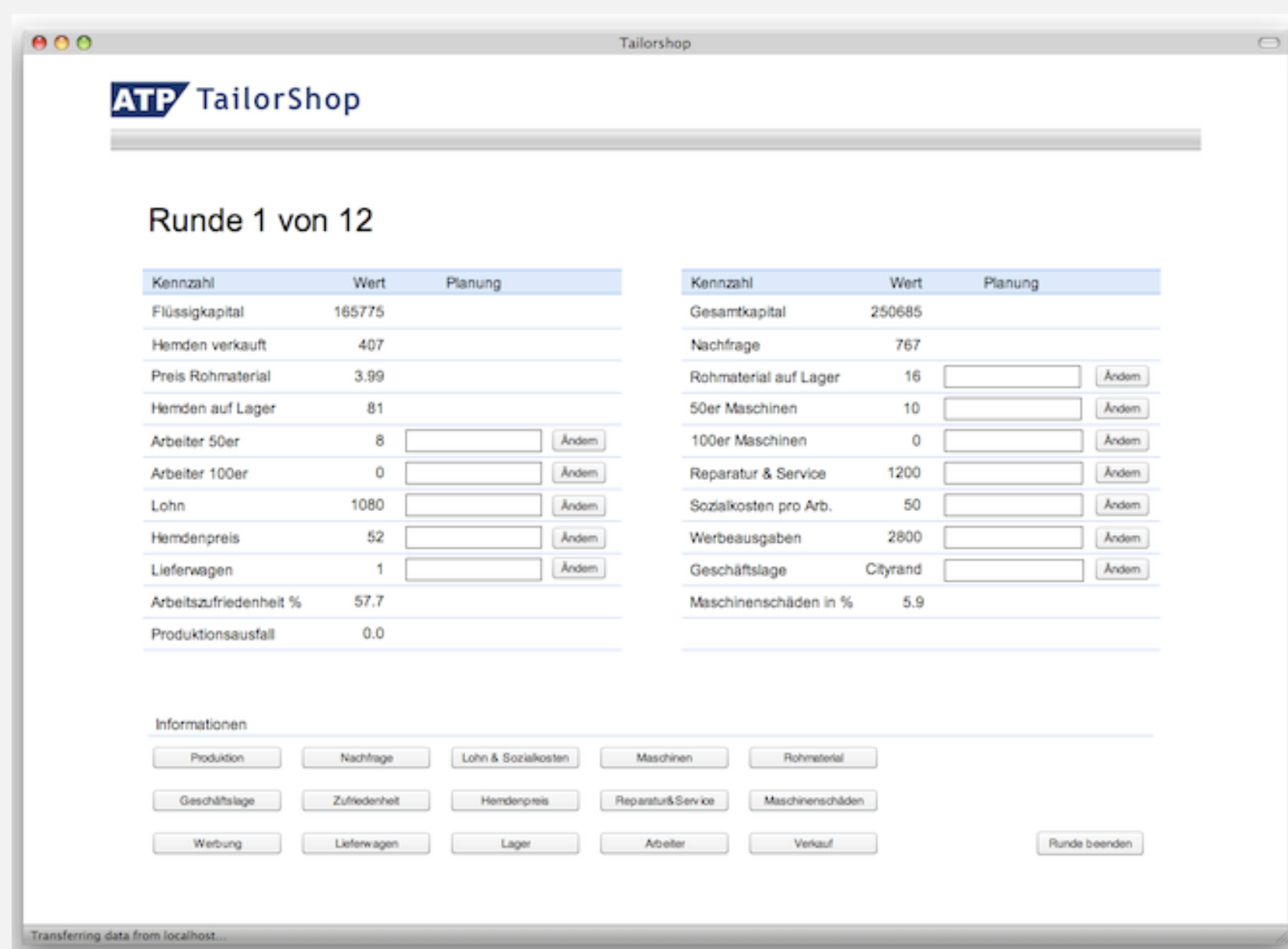
Psychological research has shown ways to efficiently combine multiple human judgments to obtain the best results. But how should we combine human and machine judgments [1]?

Challenges of AI

- Algorithmic accountability
- Ethical conflicts
- User acceptance



<https://xkcd.com/2237/>



Outcomes of diverse AI-interventions and their visualization:

- CNN
- Logistic Regression [3]
- Random Forest
- Explainable AI [2]

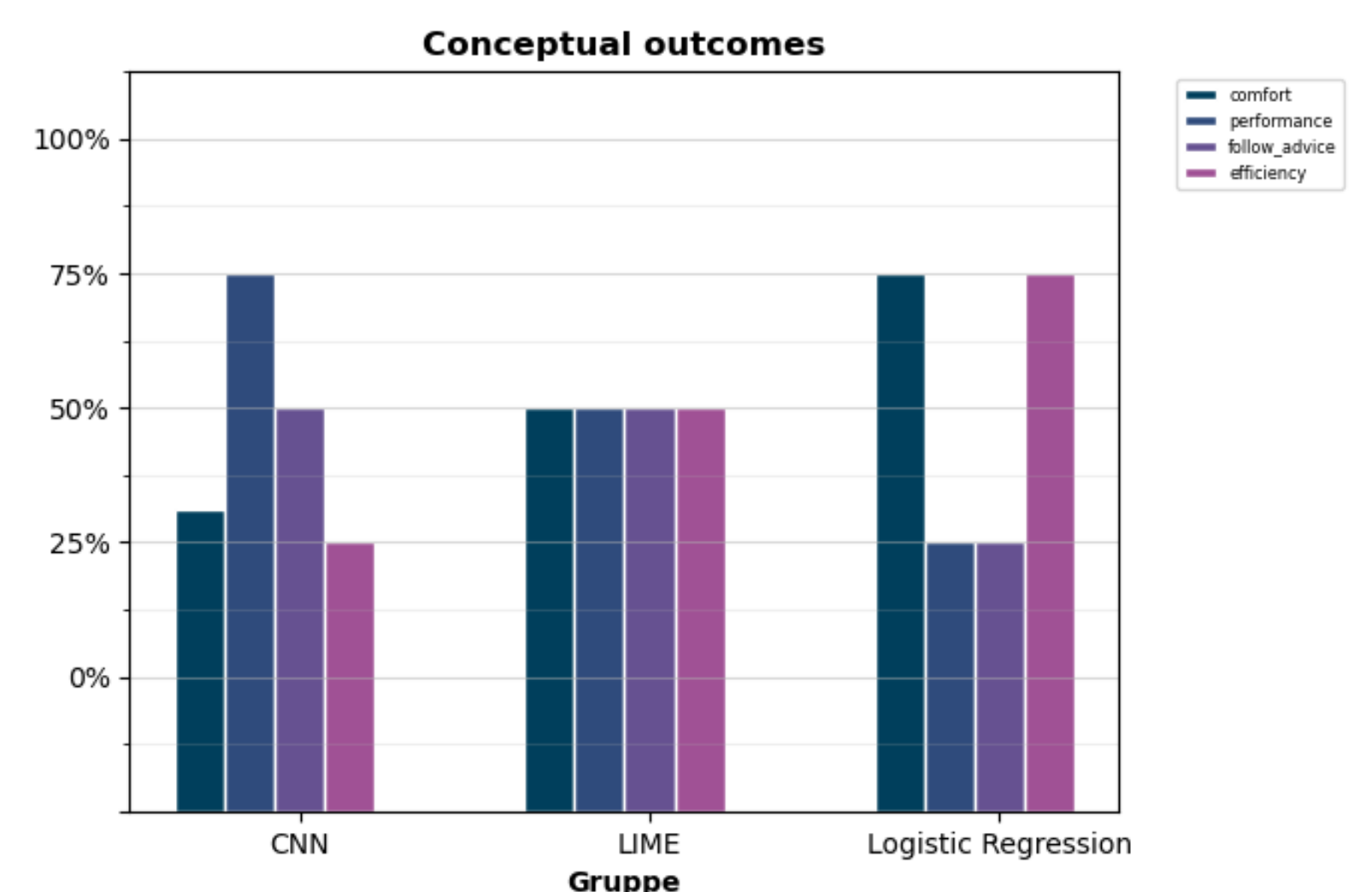
User outcomes:

- Performance
- Comfort
- Acceptance

<https://www.psychologie.uni-heidelberg.de/ae/allg/tools/tailorshop/>

Implication

- Research at the intersection between Psychology and Technology
- Interdisciplinary team of experts in Psychology, Economics, Computer Science, and Data Science
- Preparation for a prospective Master-Thesis



References

- [1] Aleksandra Litvinova. Extending the wisdom of crowds: how to harness the wisdom of the inner crowd. PhD thesis, 2020.
- [2] Himabindu Lakkaraju, Stephen H Bach, and Jure Leskovec. Interpretable decision sets: A joint framework for description and prediction. In Proceedings of the 22nd ACM SIGKDD international conference on knowledge discovery and data mining, pages 1675–1684, 2016.
- [3] Jongbin Jung, Connor Concannon, Ravi Shroff, Sharad Goel, and Daniel G Goldstein. Simple rules for complex decisions. arXiv preprint arXiv:1702.04690, 2017.
- [4] Julio Borges, Matthias Budde, Oleg Peters, Till Riedel, and Michael Beigl. Towards two-tier citizen sensing. In 2016 IEEE International Smart Cities Conference (ISC2), pages 1–4. IEEE, 2016.
- [5] Daniel Danner, Dirk Hagemann, Daniel V Holt, Marieke Hager, Andrea Schankin, Sascha Wüstenberg, and Joachim Funke. Measuring performance in dynamic decision making. Journal of Individual Differences, 2011.