DAI-Labor
TU Berlin

Technische Universitaet Berlin

Fakultaet IV - Elektrotechnik und Informatik

Fachgebiet AOT

Prof. Dr. Sahin Albayrak

Bachelorthesis proposal

Sparked, an intuitive user interface for the automated machine learning project CODA

Robin Ruth

Matrikel–Nummer 316672

Betreuer Researcher Christian Geissler Dipl.-Inform. ABC

Inhaltsverzeichnis

1 Motivation

With the ongoing digitalisation and the generation of big data in most aspects of society, data driven approaches become more viable every day. Evaluating these huge datasets is often done with an machine learning approach. Unfortunately machine learning is not a wonder tool. Not every machine learning approach is applicable for every problem. You need to know which will help answer the given question and also which will perform with reasonable time and resources. Even then the process will still need to be optimized to get optimal results. Optimizing the hyperparameters is a timeconsuming problem, which needs a lot of experience and guesswork as even with similar problems, different data may need to be handled very differently.

To find a way to automate the algorithm selection and hyperparameteroptimisation process, DAI-Labor (Distributed Artifical Intelligence) and GTARC (German Turkish Advanced Research Center for ICT) have started CODA, a fundamental resarch project.

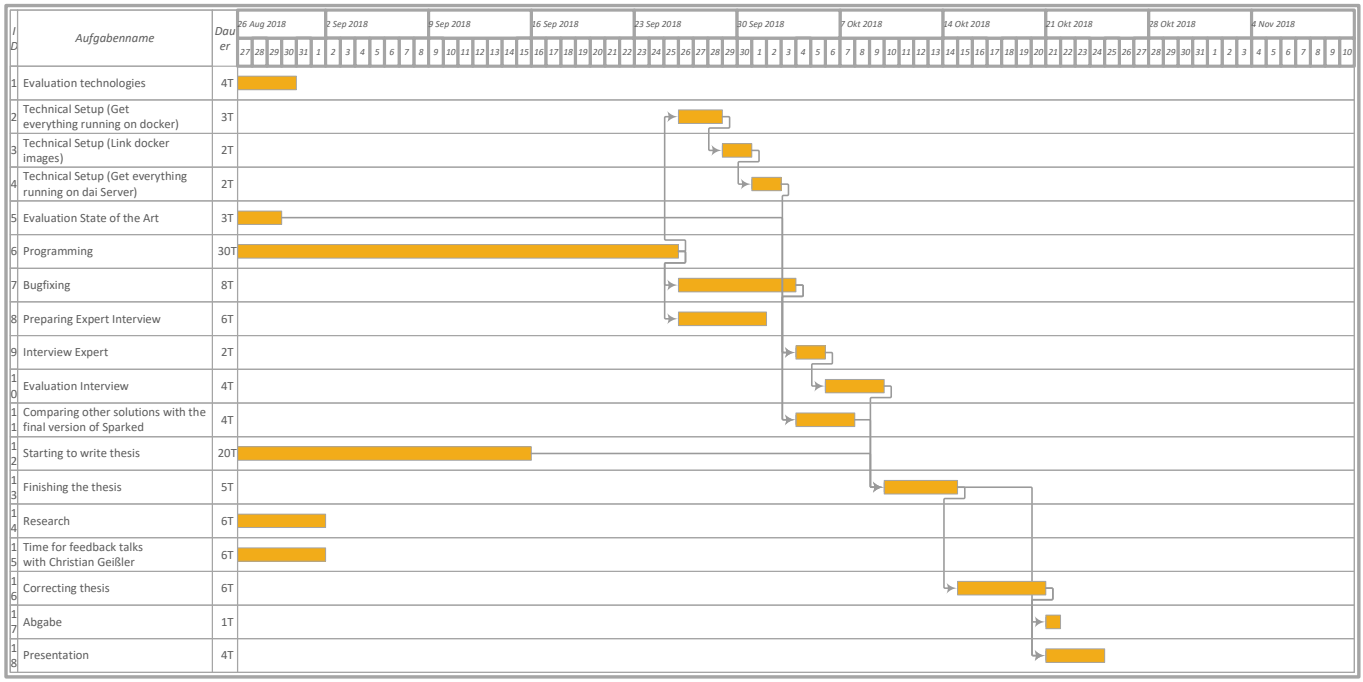
This project creates an interface to CODA, allowing machine learning specialists and enthusiasts to use the created programms in optimisation problems and for the CODA team to have a user interface to show the developed capabilities.

2 Objective

3 Work packages

- Evaluating technologies
  - Diplay graphs

Sparked time plan



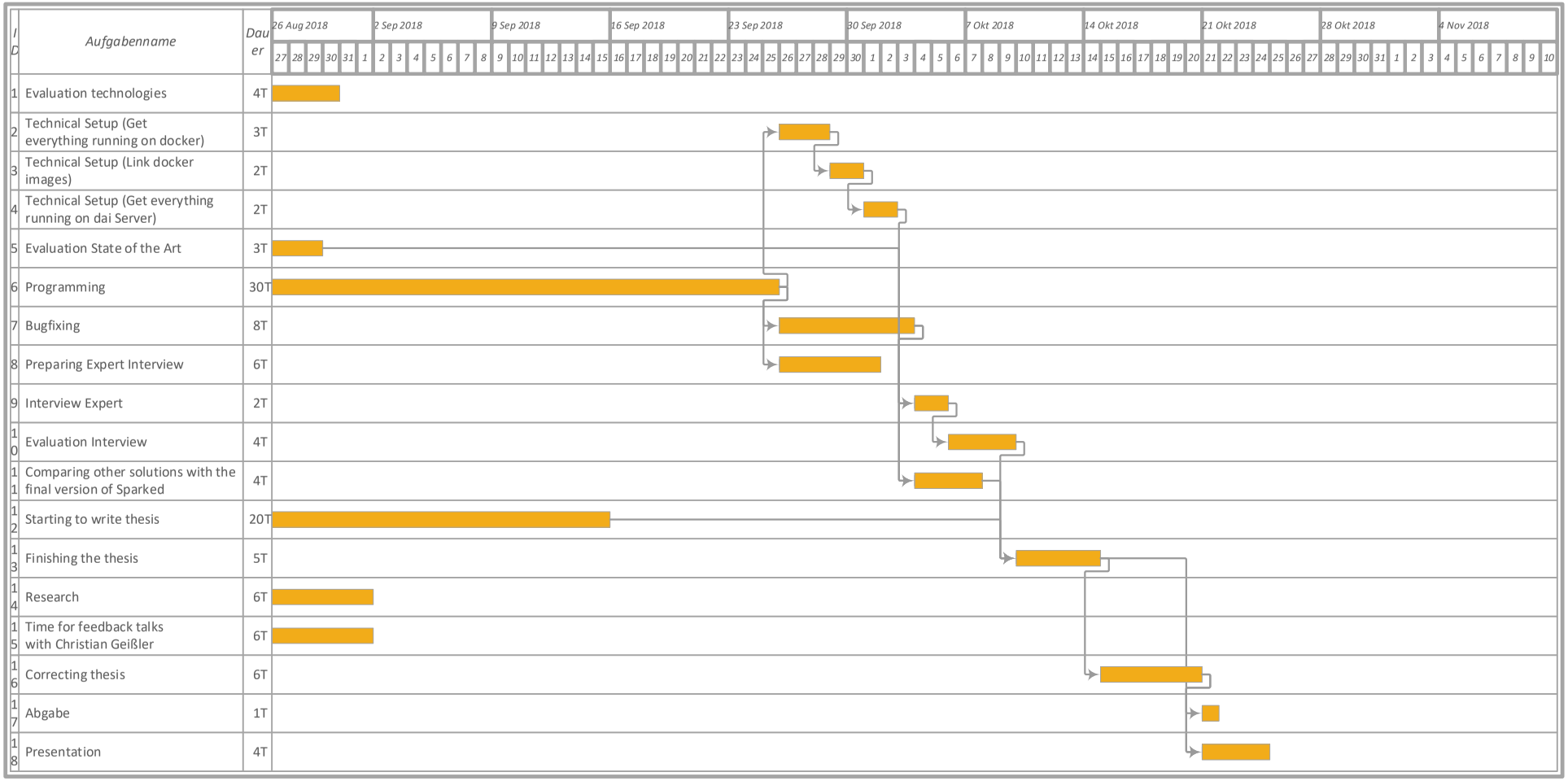
ID	Aufgabenname	Dauer
1	Evaluation technologies	4T
2	Technical Setup (Get everything running on docker)	3T
3	Technical Setup (Link docker images)	2T
4	Technical Setup (Get everything running on dai Server)	2T
5	Evaluation State of the Art	3T
6	Programming	30T
7	Bugfixing	8T
8	Preparing Expert Interview	6T
9	Interview Expert	2T
10	Evaluation Interview	4T
11	Comparing other solutions with the final version of Sparked	4T
12	Starting to write thesis	20T
13	Finishing the thesis	5T
14	Research	6T
15	Time for feedback talks with Christian Geißler	6T
16	Correcting thesis	6T
17	Abgabe	1T
18	Presentation	4T

4 Organizational

- Language of this Bachelorthesis is english.
- The thesis will be written with pdflatex.
- Choosing programming languages and technologies are not defined and part of the development process.
- Supervisors is Christian Geißler
- Evaluators are Prof. Dr. Albayrak and Prof. Kao **inproceedings**

5 Appendix

Sparked time plan



ID	Aufgabenname	Dauer
1	Evaluation technologies	4T
2	Technical Setup (Get everything running on docker)	3T
3	Technical Setup (Link docker images)	2T
4	Technical Setup (Get everything running on dai Server)	2T
5	Evaluation State of the Art	3T
6	Programming	30T
7	Bugfixing	8T
8	Preparing Expert Interview	6T
9	Interview Expert	2T
10	Evaluation Interview	4T
11	Comparing other solutions with the final version of Sparked	4T
12	Starting to write thesis	20T
13	Finishing the thesis	5T
14	Research	6T
15	Time for feedback talks with Christian Geißler	6T
16	Correcting thesis	6T
17	Abgabe	1T
18	Presentation	4T

Literatur

Nielsen u. a.: Getting Access to What Goes on in People's Heads? Reflections on the Think-aloud Technique Nielsen:2002:GAG:572020.572033

Janni Nielsen, Torkil Clemmensen und Carsten Yssing. „Getting Access to What Goes on in People's Heads? Reflections on the Think-aloud Technique". In: *Proceedings of the Second Nordic Conference on Human-computer Interaction*. NordiCHI '02. Aarhus, Denmark: ACM, 2002, S. 101–110. ISBN: 1-58113-616-1. DOI: 10.1145/572020.572033. URL: http://doi.acm.org/10.1145/572020.572033.

Nørgaard u. a.: What Do Usability Evaluators Do in Practice? An Explorative Study of Think-aloud Testing Norgaard:2006:UEP:1142405.1142439

Mie Nørgaard und Kasper Hornbæk. „What Do Usability Evaluators Do in Practice? An Explorative Study of Think-aloud Testing". In: *Proceedings of the 6th Conference on Designing Interactive Systems*. DIS '06. University Park, PA, USA: ACM, 2006, S. 209–218. ISBN: 1-59593-367-0. DOI: 10.1145/1142405.1142439. URL: http://doi.acm.org/10.1145/1142405.1142439.