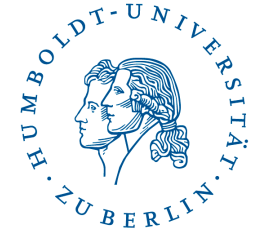


Machine Learning for Education

Introduction

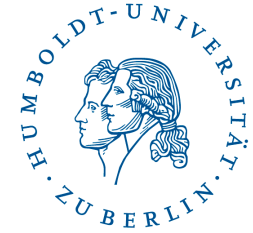
Dr. Jakub Kuzilek

House rules



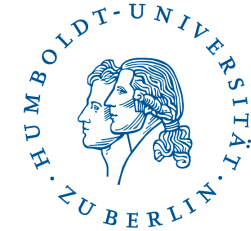
- Full names
- Camera on (if you have one)
- Question -> Raise hand
- Apology for mandatory lectures
- Problem -> ask me, write e-mail or contact me via Moodle

Learning objectives



- Students know **essentials of machine learning**.
- Students learn **essentials of R programming**.
- Students gain knowledge **how to process and analyze (educational) data**.
- Students gain knowledge of **essentials of educational domain and learning analytics**.

Agenda



Deadline for assignment submission

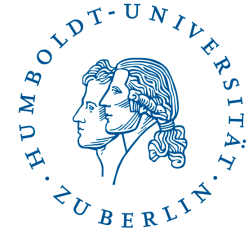
Order	Date	Topic	Type
1	17. 04. 2024	Introduction	L
2	24. 04. 2024	Introduction to Machine Learning; Introduction to R & RStudio	S
3	01. 05. 2024	Holidays	
4	08. 05. 2024	Machine Learning cycle; Data manipulation in R - Tidyverse	S
5	15. 05. 2024	Martin Hlosta: Virtual Reality analytics in Education	L
6	22. 05. 2024	Unsupervised methods; Clustering (kmeans)	S
7	29. 05. 2024	Benjamin Paaßen: Knowledge Assessment Models	L
8	05. 06. 2024	Supervised methods; Caret & k-Nearest Neighbours	S
9	12. 06. 2024	Fernando Marmolejo-Ramos: GAMLSS as a framework for statistical learning	L
10	19. 06. 2024	Supervised methods; Naïve Bayes & Perceptron	S
11	26. 06. 2024	Clara Schumacher: Pedagogical Perspectives on Learning Analytics	L
12	03. 07. 2024	Supervised methods; Classification and Regression Tree, Random Forest	S
13	10. 07. 2024	Essay writing	C
14	17. 07. 2024	Essay writing	C

(L)ecture, (C)onsultation, (S)eminar

Deadline for essay submission

Lectures are mandatory

Requirements for the assessment



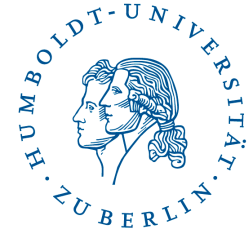
1. Programming assignments

Submission of working solution to the programming assignments of acceptable quality. You need to submit at least 3 (50 %) assignments.

2. Essay

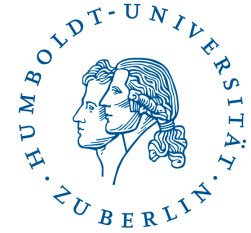
Submission of the short essay (1000 – 1500 words) on selected topic.

Programming assignments



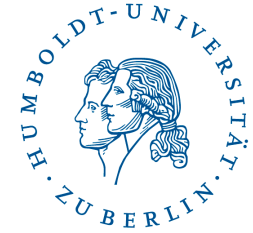
- Code is working – 30 points
- Code is well written (unified notation, using one coding style and writing style, comments!) - 30 points
- Code is producing correct results - 40 points
- Each assignment is scored 0-100 points, you need to achieve at least 50 points from each.
- No extensions for submissions.

Essay



- Write an essay (state-of-the-art) on selected topic
- There will be 5 topics based on the external lectures and additional 5 topics
- Each topic will have limit on number of students
- Use proper referencing
- Your arguments needs to be supported by existing literature
- 1000 – 1500 words
- Deadline 17. 7. 2024. No exceptions.

Course resources



Moodle

<https://moodlelab.hu-berlin.de/course/view.php?id=50>

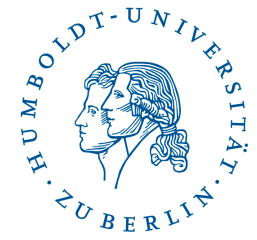
Key: ML4EDSOSE24

Zoom

<https://hu-berlin.zoom-x.de/j/62840548572?pwd=NXUxa0E2citJQndtTWdTQjRoM3BmUT09>

Contact

jakub.kuzilek@hu-berlin.de



Questions?