

Thesis Idea Presentation

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Research Topic

- A Machine Learning Approach of Logistic Organ Dysfunction Score Estimation with Data Acquired from Bedside in ICU
- **Keywords:** Data Science, Healthcare Decision Support, Organ Dysfunction Estimation

Background

- Logistic Organ Dysfunction Score
 - weighted variables with the worst values in first 24h that reflect severity level within an organ system and among organ systems.
 - Hybrid score system, outcome risk prediction + organ dysfunction score system
 - Some variables are from laboratory results
 - 6 Organs
- Not widely used as another one, Sequential Organ Failure Assessment
- Research can be done to improve
 - Usability
 - Accuracy

Research Questions

- Is it possible to substantially improve usability and affect accuracy a little?
- Is it possible to use some vital signs or other easy-acquired values to check organ situation?

Research Tasks

- Literature Review
- Propose a solution to increase the usability

Schedule

- Data preparation (24.4.2023-28.5.2023)
 - Acquire necessary data
 - Remove data out of scope
 - Process missing data, insert or remove (includes algorithm selection)
- Use algorithms to select variables (29.5.2023-2.7.2023)
- Prepare data with selected variables (3.7.2023-16.7.2023)
- Apply algorithms on processed data to propose the model
(17.7.2023-3.9.2023)
- Analyse and interpret results (4.9.2023-17.9.2023)