

# Analysis on matching and optimization algorithms for a preference-aware distribution system of workers

## Initial situation

In the research project "Optimization of logistics systems through Artificial Intelligence under consideration of employee preferences", employees are to be assigned to the best jobs for them based on their preferences. Among other things, the project will investigate to what extent preferences or personal data can be used ethically in AI algorithms.

## Objective and approach

In this student research project different approaches of artificial intelligence are to be examined for their implementation for a preference-oriented AI. For the different approaches, the form and quantity of the initial data have to be analyzed. In addition, existing open-source datasets will be researched and tested for their applicability in the different AI approaches.

For this purpose the following points must be processed:

- Literature research on current AI-algorithms focusing on matching and optimization problems
- Comparison and evaluation of the different approaches regarding their usability for preference-oriented system optimization
- Analysis of requirements for input datasets
- Research on suitable open-source datasets and (if possible) prototypical implementation of the chosen approaches

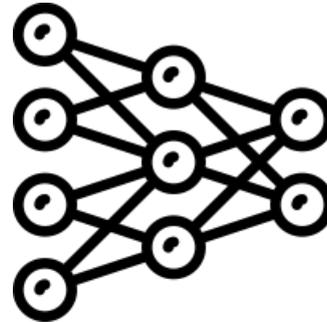


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## Requirements

- Basic knowledge of artificial intelligence algorithms
- Basic knowledge of programming, ideally Python
- Strong interest in current developments in artificial intelligence and open-source datasets
- Ability to record and process gained knowledge in a structured way
- Independence, reliability and initiative

The work should be done as a master's thesis in English or German. Students of Human Factors Engineering, TUM-BWL or similar are also welcome.

## Contact

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