

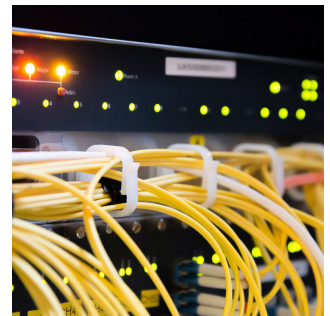
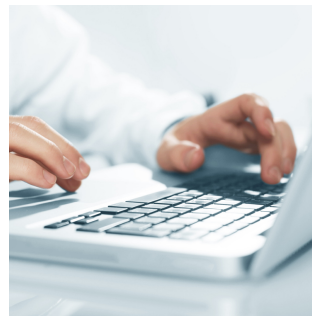
Master thesis, bachelor thesis, project thesis

## Development of a genetic algorithm for a cellular VRP

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In the research project ZellFTF, the economic and logistical efficiency of the use of cellular transport units, which are formed by automated guided vehicles, is investigated in comparison to conventional approaches (e.g. transport with forklifts).

The aim of the thesis is to develop a genetic algorithm for the approximate solution of a vehicle routing problem (VRP) for cellular AGVs. The algorithm is to be written in Python. The model for which the genetic algorithm is to be developed is available. The developed solution approach is to be compared with optimal solutions for a VRP (e.g. using CPLEX).



### Your tasks

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- Literature research on existing mathematical approaches for intralogistic transport processes
- Development of a genetic algorithm to solve the existing vehicle routing problem for cellular AGVs
- Implementation of the algorithm with Python
- Application of the algorithm for an exemplary production layout
- Evaluation of the algorithm in comparison to optimal solutions of the VRP (e.g. by CPLEX)

### Your profile

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You are studying one of the following subjects:

- Mechanical Engineering
- Industrial engineering
- Economics and Management
- Production and Logistics
- or similar

You are interested in logistic models, mathematical modeling, operations research and intralogistics? And do you enjoy working independently on new topics? Then you are welcome to apply!

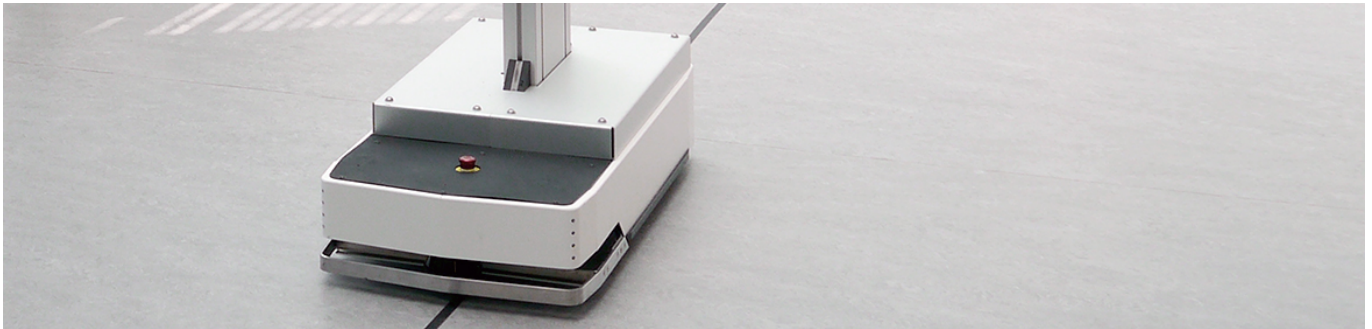
You should already have basic knowledge of logistic models and OR and have some programming experience (especially Python).

Good written and spoken German and/or English skills are required!

## We offer

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- independent work
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- long-term cooperation if necessary



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Die Bewerbung muss Anschreiben, Lebenslauf sowie Prüfungsleistungen des Studiums / Zeugnisse enthalten.

## Contact

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Torben Mente  
M.Sc.

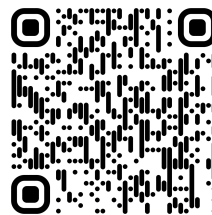
+49 (0)511 279 76-236

IPH - Institut für Integrierte Produktion Hannover gGmbH  
Hollerithallee 6  
30419 Hannover

[www.iph-hannover.de](http://www.iph-hannover.de)

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