Expose for Master Thesis

Ant Colony based Optimization for Multi-Robot Task Allocation and Path Planning

Project Supervisors:
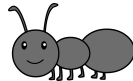
Prof. Dr.-Ing. hbil. Sanaz Mostaghim
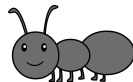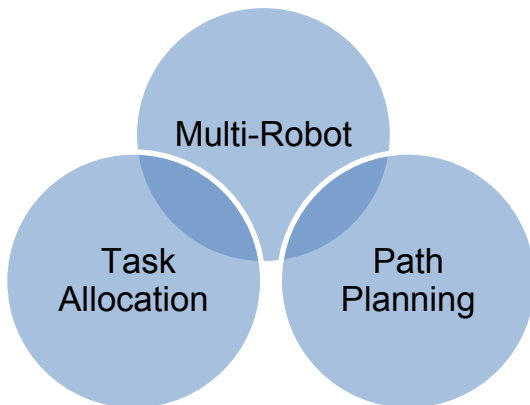Dr. Paul Thieme (Fraunhofer IPA)

Project Advisors:

Dr.-Ing. Christoph Steup
Mr Christian Henkel

Agenda

❖ Problem
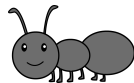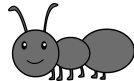
❖ Technique

❖ Application Area

❖ Structure

❖ Progress

Problem

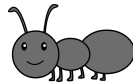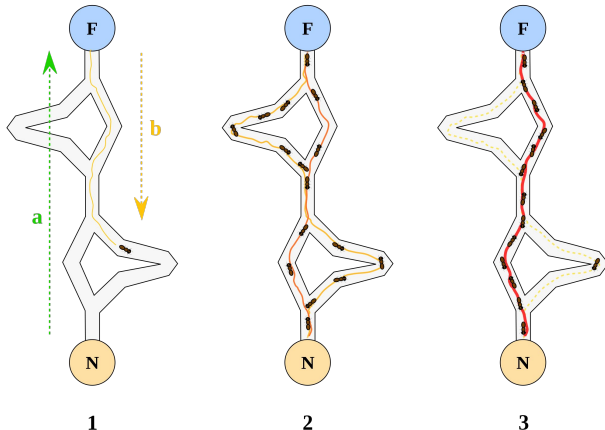Multi-Robot
Task Allocation &
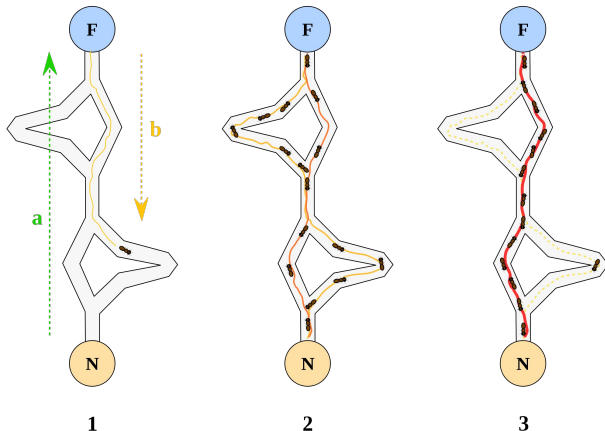Path Planning

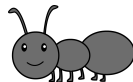Multi-Robot
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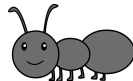Path Planning

More Ants

Technique

Technique
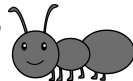
Application Area

- Industry 4.0 (Fraunhofer IPA)

- Cloud Robotics (Fraunhofer IPA)

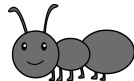- Educational Research (Publication)

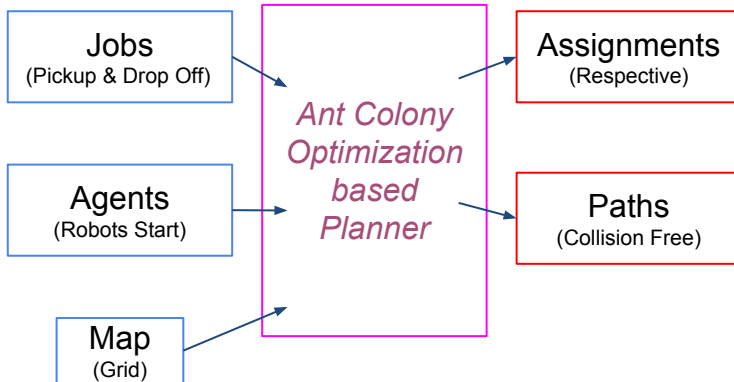## Application Area

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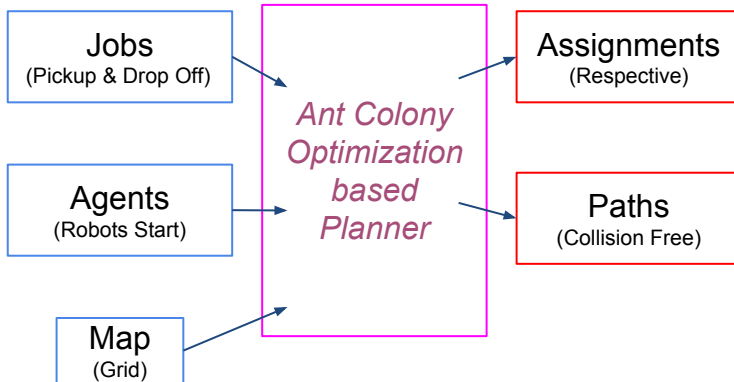
https://github.com/cch-cs/miriam

Structure

Structure

Jobs
(Pickup & Drop Off)

Agents
(Robots Start)

Map
(Grid)

Ant Colony Optimization based Planner
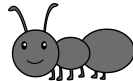
Assignments
(Respective)

Paths
(Collision Free)

Optimizing Total Distance

Progress

Completed:

Structure of Ants traversal and iterations
Pheromone and distance update structure
Optimization of distance for given simple Nodes
Return of optimized selected simple Nodes

In works:

Distance structure for pick up and drop off Nodes
Registering Master Thesis and Expose (Magdeburg)

Progress

Completed:

Structure of Ants traversal and iterations
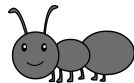Pheromone and distance update structure
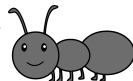Optimization of distance for given simple Nodes
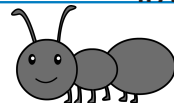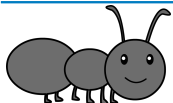Return of optimized selected simple Nodes

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https://trello.com/b/6P7PgnBf/master-thesis

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