



Supervisor: Jørgen Villadsen <jovi@dtu.dk>

# Bachelor Projects in AI, Logic and Programming

# Multi-Agent Systems

## Description

A multi-agent system is a distributed system with intelligent agents capable of sensing and acting and it can be used to solve problems which are difficult or even impossible to handle with traditional approaches.

The purpose of the project is to define, implement and evaluate a prototype of a multi-agent system using for example the agent programming language GOAL, available as open source software:

<https://goalapl.atlassian.net/wiki/spaces/GOAL/overview>

More information: <https://people.compute.dtu.dk/jovi/MAS/>

Optional participation in the GOAL-DTU team:

MAPC — Multi-Agent Programming Contest

## Prerequisites

02156 Logical Systems and Logic Programming

## Supervisor

Jørgen Villadsen

# Prover Programming

**Description** Mathematical logic is used for the formalization of systems and results in computer science and mathematics. Provers are the main formalization technology and are often implemented in functional programming languages like F# or SML, or logic programming languages like ISO Prolog or Visual Prolog. Furthermore, proof assistants like Isabelle can formalize algorithms and logical inference systems, both abstractly and concretely.

The purpose of the project is to develop and evaluate a prototype of a prover for first-order logic, but higher-order logic or type theory can also be considered, and the prover can be automatic or interactive.

**Prerequisites** 02156 Logical Systems and Logic Programming

**Supervisor** Jørgen Villadsen