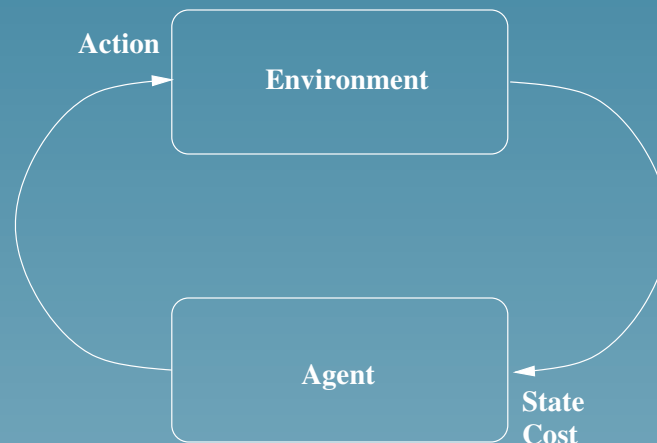


T-61.6020 Special Course in Computer and Information Science II

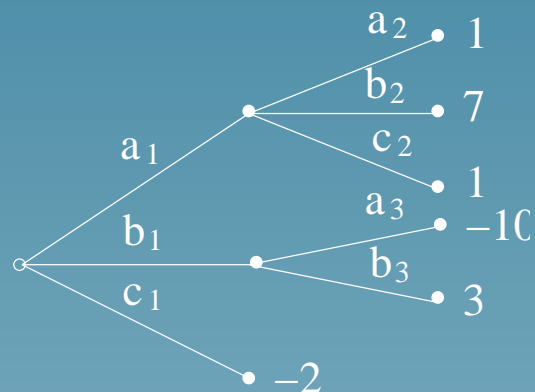
Reinforcement Learning—Theory and Applications

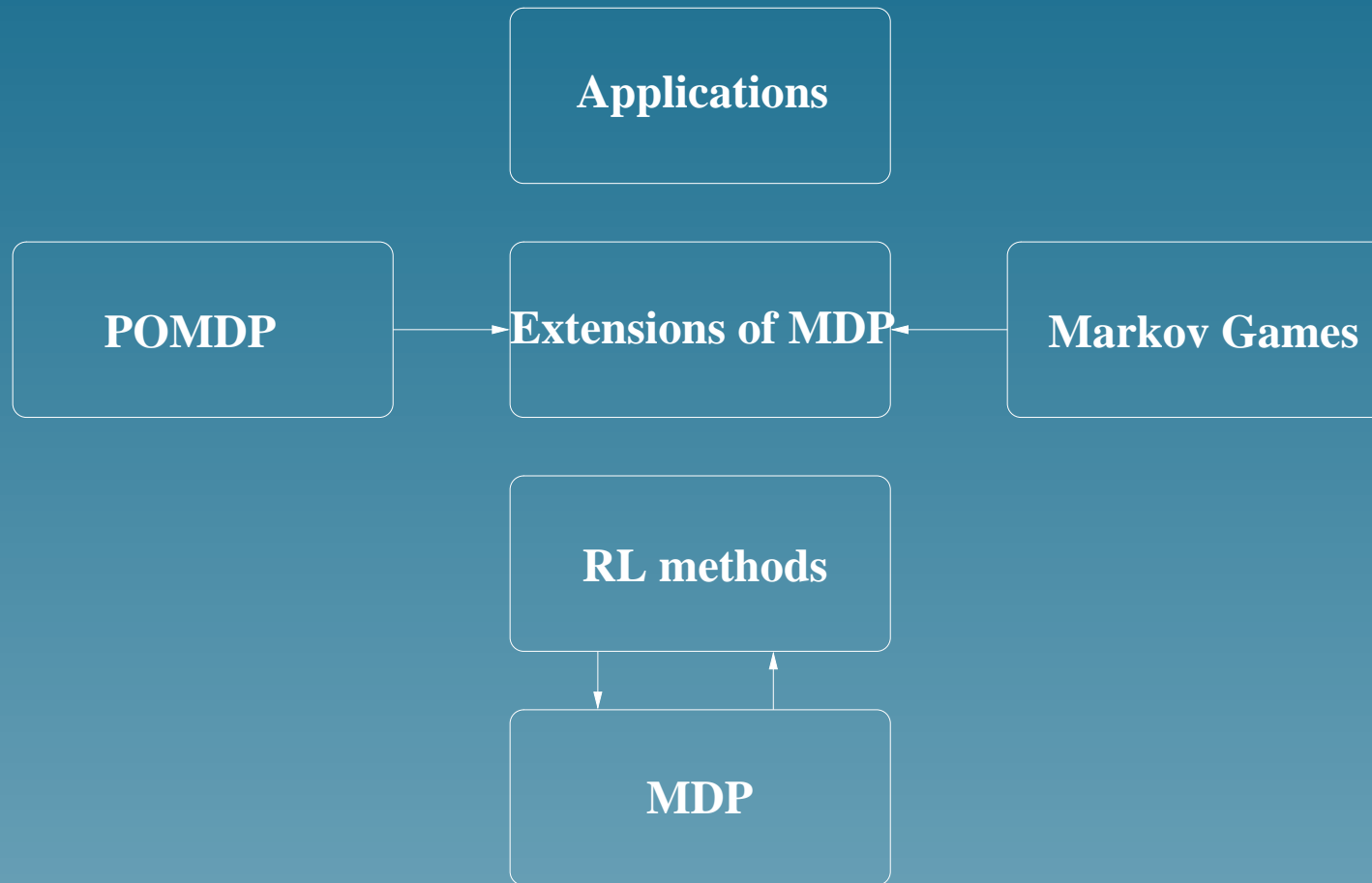
Ville Könönen
Laboratory of Computer and Information Science
ville.kononen@tkk.fi

- The main concept in this seminar course is an *agent*
- It is assumed to be *autonomous* and *rational*
- The agent has a utility function representing its design goals
- and it has *sensors* for sensing its environment and *effectors* for changing the environment



- In this seminar our focus is on the tasks where all attributes (time, actions, state ...) are discrete
- A central mathematical model is *Markov Decision Process (MDP)*
- MDP is a tool for solving problems that require planning
- Most Reinforcement Learning methods are iterative solution tools for MDPs





Requirements for Passing the Course

1. Active participation for seminars (at least 70%)
2. Accepted project work (details of this will be published later)
3. Grading: fail–pass
4. Consulting hours: please send Email