

Beskrivelse af specialkursus: AI in Game Programming

Dansk titel AI i spilprogrammering.

Point 7.5 ECTS.

Anbefalet placering Midt i studiet (civil).

Undervisningsform Projektarbejde.

Kursets varighed 13-uger.

Evalueringsform Rapport.

Bedømmelsesform 13-skala, intern censur.

Faglige forudsætninger Et kursus i indledende programmering.

Kursusmål The objective of the course is to introduce the students to a wide variety of artificial intelligence concepts, methods, and algorithms related to and applicable in game programming and development.

After the course the student is skilled in one or more of the following topics:

- providing a general overview of the major fields within artificial intelligence
- applying machine intelligence in games
- recognizing in which situations Bayes rule is applicable and how it should be applied
- working with basic rule-based systems
- finding a path
- performing deterministic [game logic] and probabilistic [decision theory] predictions
- building a finite state machine
- describing and apply the related methods and algorithms
- developing its own intelligent game

Kursusindhold Besides the appropriate motivation to the theory and practice of artificial intelligence for game programming, the course covers subjects which range from deterministic via rule-based to fully stochastic methods and their application. More specifically, topics included are neural networks, game logic, finite state machine, chasing and evading, expert systems, flocking, statistical decision theory, path finding, and pattern matching, potential function based movement.

During the exercises, the aim is to implement [i.e. apply] one or more of the topics introduced in an actual game. This will be done based on programming languages and methods that support these theories.

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