

Optimization and Simulation

Simulation laboratory overview

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Overview

Aim

- Be familiar with a simulation approach
- Apply appropriate statistical techniques
- Use simulation based optimization

How:

- Develop a simple traffic simulation software in MATLAB

The program consists of function implementations based on the simulation lectures

ATTENTION: to make the program work, the functions must fit together. Consistent interfaces.

Overview

Laboratory organization

Group work

7 laboratories

2 projects -> 2 presentations

Workload (plan in advance)

Date	Topic
March 24	Random Number Generation Poisson Process
March 31	Discrete Event Simulation Statistical Analysis and Bootstrapping
April 07	No lecture - Spring break
April 14	Introduction of Simulation Project I Preparation of Simulation Project I
April 21	Preparation of Simulation Project I
April 28	Presentation of Simulation Project I
May 05	Variance Reduction Techniques
May 12	Simulated Annealing Introduction of Simulation Project II
May 19	Preparation of Simulation Project II
May 26	Presentation of Simulation Project II

Overview

Group organization

Group	Name
1	Hameri Tuure Eelis
	Murashkin Mikhail
	Lederrey Gael
	Buntinx Vincent Christian
2	Binder Stefan Yves Gabriel
	Pereira Barbosa Santos Ana Clara
	Molyneaux Nicholas Alan
	Kirci Mervegül
3	Carraro Luca
	Tarquini Danilo
	Besson Adrien Georges Jean
	Kuznetsova Ekaterina

Group	Name
4	Damergi Eya
	Thurm Boris
	Fabietti Luca
	Shafieezadeh Abadeh Soroosh
5	Kruyt Albertus Christiaan
	Usui Takafumi
	Saijets Santtu
	Muscinelli Samuel Pavo
6	Lamotte Raphael Ali Francis
	Wolfensberger Daniel
	Voutilainen Arttu
	Gozel Olivia

Overview

Evaluation

Presentations of the two projects

Group work

Class involvement

Quality of the code, it should:

- Work
- Be clean
- Be commented

Overview

Material

Sheldon M. Ross, 2013. *Simulation*. Academic Press

