Computational Geometry

Semester :	Winter 2012/2013 [Other terms: Winter 15/16 · Winter 14/15 · Winter 13/14]
Module # :	INF-ALG-18 , INF-ALG-18
Event # :	INF-ALG-007, INF-ALG-008
Programmes :	Diplom Informatik, Master Informatik, Diplom Wirtschaftsinformatik, Master Wirtschaftsinformatik
IBR Group(s) :	ALG (Prof. Fekete)
Type :	Vorlesung/Übung
Lecturer :	**Prof. Dr. Sándor P. Fekete** Abteilungsleiter s.fekete@tu-bs.de +49 531 3913111 Room 335
Assistant :	**Dr. Christiane Schmidt** Ehemalige Wissenschaftliche Mitarbeiterin
Credits :	5
Hours :	2+1
Time & Place :	Lecture: Tuesday, 15:00 - 16:30 , PK 3.3 Exercises: Monday, 16:45 - 18:15 , PK 3.2 small tutorial, Wednesday, 18:30 - 20:00: IZ 358
Start :	First Lecture: Tuesday, October, 23 First Tutorial: Monday, November, 12 First small tutorial: Wednesday, November 23
Prerequisites :	none
Language :	English
Certificates :	(Homework assignments during the semester, and)* an oral exam at the end. (*=Studienleistung)
Content :	After the course, the participants know the basic models of geometric algorithms. They are able to identify algorithmic difficulites of geometric problems and are able to formulate adequate objectives. They can handle different solution techniques and are able to develop algorithmic methods for yet unknown problems. They survey the practical relevance of problems and solutions.

We will speak English in class. Students are encouraged (but not required) to use English in exercises and exams as well.

Topics:

1. Geometric Problems and Data Structures
2. Triangulation
3. Localization
4. Voronoi Diagrams
5. Convex Hulls
6. Motion planning for robots

References :

- Mark de Berg, Marc van Kreveld, Mark Overmars and Otfried Schwarzkopf: *Computational Geometry: Algorithms and Applications*, Second. Edition, pages 367, Springer-Verlag, 2000 (deBerg2000, BibTeX)
- Rolf Klein: *Algorithmische Geometrie*, pages 1-355, examen.press, 1997 (Klein1997, BibTeX)

Announcements and Dates

- You may view your exam papers on Wednesday, April 10, 14:00-15:00 in Room 313

- The result of the exam can be found here: [PDF]

- The list of people who achieved the "Studienleistung" this term: [PDF]

- The exam will take place on Monday, March 25, 2013, 10:30am-12:30pm (10:30-12:30), in room PK 4.3.

- Homework set #5 is online: [PDF]

- The tutorial on January 7, 2013, will not take place!

- Homework set #4 is online: [PDF]

- Homework set #3 is online: [PDF]

- The third homework set (#2 that is ;)) is online: [PDF]

- The second homework set (#1 that is ;)) is online: [PDF]

- Attention: the first tutorial ist postponed to November 12 (not November 5)!!

- The first homework set is online: [PDF]

- Videos of further lecturse: video1, video2, video3, video4.

  video1, video2, video3, video4.
- Videos of the eigth lecture: video1, video2, video3, video4. Compact mp4-files: video1, video2, video3,video4.

- Videos of the sixth lecture: video1, video2, video3, video4. Compact mp4-files: video1, video2, video3, video4.

- Videos of the fifth lecture: video1, video2, video3, video4. Compact mp4-files: video1, video2, video3, video4.

- Videos of the fourth lecture: video1, video2, video3, video4.

- Videos of the third lecture: video1, video2, video3.

- Videos of the second lecture: video5, video6, video7, video8.

- Videos of the first lecture: video1, video2, video3, video4.

- compact videos of the lectures: video1, video2, video3, video4.

General Information

- material, as videos and slides from the tutorials, can be found on the material page (password protected).

- Schedule of all lectures, tutorials etc.: [PDF]

- There is a mailinglist. We will distribute the homework sets and other announcements via this list, so, please subscribe!