

# VO+PS "Computational Geometry"

## SS 2018

This WWW page is the home page of [my course](#) VO+PS "Computational Geometry" (AISP)/"Algorithmische Geometrie" (SS 2018). Computational geometry is the study of the design and analysis of efficient algorithms for solving problems with a geometric flavor. The methodologies of computational geometry allow one to investigate solutions of numerous geometric problems that arise in application areas such as computer-aided design, manufacturing, geographic information systems, image processing, robotics and graphics.

This course offers an introduction to computational geometry: We will discuss geometric searching, convex hulls, Voronoi diagrams, straight skeletons, triangulations, and robustness issues. We will learn to analyze geometric problems and to design algorithms for solving them in an efficient manner. Students will be exposed to important algorithmic paradigms of geometric computing, and will acquire in-depth knowledge of basic geometric data structures (such as triangulations and Voronoi diagrams). This course will also cover sample applications of these data structures and algorithms for solving real-world problems.

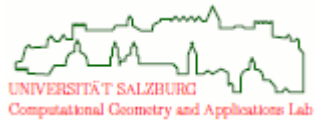
- PS: FR 10:00-11:00 in T02;  
VO: FR 11:15-13:00 in T02.
- The course will be given (in a slightly blocked manner) at the times specified.
- Both VO and PS will start on 02-March-2018 at the begin of PS.
- Both VO and PS **will be taught in English** if foreign (AISP) students who are not fluent in German decide to take the course. (I will also take questions in German, though.)
- The slides used in the VO lectures are available as PDF files:
  - [Lecture slides \(with all animations and partial build of pages\)](#)
  - [Study slides \(with only a few animations and no partial builds\)](#)
  - [Printer-friendly slides \("color-reduced" version of the study slides\)](#)

All three versions are updated consistently by means of a script. (Please let me know if you'd catch a problem that might be due to this automated generation of these PDF files.)

- Please note that a **standard knowledge of (discrete) mathematics, algorithms and data structures, complexity theory and geometric computing will be required to take the course!**
  - Please consult appropriate textbooks if you feel uneasy with that material.
  - Alternatively, you may want to check my lecture slides on
    - [Propositional and Predicate Logic](#),
    - [Discrete Mathematics](#),
    - [Geometric Computing](#),
    - [Advanced Algorithms and Data Structures](#).

Yes, these slides all are in English!

- [Grading policy for VO and PS](#).
- [Homework assignments for the PS](#).



file last modified: Wednesday, 28-Feb-2018 18:33:51 CET

**held@cs.sbg.ac.at**

Copyright © 2018 Martin Held. All rights reserved.

