informatik-Kolloquium

The Department of Computer Science of Johannes Kepler University Linz[1] together with the Austrian Society of Computer Science (ÖGI) invites to the following talk:

Topic: Shape Optimization for Consumer-Level Digital Fabrication

Presenter: Przemyslaw Musialski, Vienna University of Technology

Date: December 13th, 2017, 3:30pm

Location: Johannes Kepler University Linz, Science Park Building 3, Room 058

Abstract: Traditionally, 3d modelling in computer graphics deals with the geometric and visual aspects of 3d shapes. On the other hand, due to the growing capabilities of personal digital fabrication technology and its spread into offices and homes, 3d models are increasingly entering the physical world. Therefore, the physical properties of 3d models come into focus. For example, 3d-printed models should be able to stand balanced in a desired pose without toppling over, or should posses certain properties, like a specific sound if vibrating or a minimal structural strength if exposed to external forces. It is thus desirable to have methods that allow the user to specify the intended physical properties of an object in addition to its 3d geometry, and which automatically take these properties into account when generating a specification for a 3d printer. In this talk I will give an introduction to such computational design problems and introduce a methodology for efficient non-linear shape optimization.

Short Bio: Przemyslaw Musialski is university assistant and principal investigator at the TU Wien (Vienna University of Technology), Institute of Discrete Mathematics and Geometry, and member of the Center for Geometry and Computational Design (GCD) where he heads the Computational Fabrication group.
He obtained the MSc degree (Diplom-Mediensystemwissenschaftler) in 2007 from the Bauhaus University Weimar and the PhD degree (Dr.techn.) in 2010 from the TU Wien. From 2007 to 2011 he was with VRVis Research Center in Vienna, and from 2011 till 2012 he was postdoctoral scholar at the Arizona State University. Since April 2012 he is with TU Wien.

Organizer: Univ.-Prof. Dr. Oliver Bimber, Institute of Computer Graphics

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Application Oriented Knowledge Processing (FAW), Bio Informatics, Computational Perception, Computer Architecture,, Computer Graphics, Formal Models and Verification, Networks and Security, Integrated Circuits, Pervasive Computing, Software Systems Engineering, System Software, Telecooperation, Signal Processing

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