Kernel Functions and Meshless Methods

Workshop honoring the 65th birthday of Robert Schaback

Göttingen, January 14–15, 2011

Positive definite functions or kernels have emerged as a useful tool in various applications including machine learning, parameter identification, computer aided design and meshless methods for solving partial differential equations. As a pioneer of kernel based methods, Robert Schaback and his contributions to this field over a career spanning more than four decades are honored on the occasion of his 65th birthday.

ORGANISATION

The workshop is jointly organized by the Institut for Numerical and Applied Mathematics, Georg-August University Göttingen and the DFG-Graduiertenkolleg "Identification in Mathematical Models: Synergy of Stochastic and Numerical Methods".

PARTICIPANTS

The aim of the workshop is to bring together colloaborators, colleagues and students of Robert Schaback who have been taken part in the development of kernel-methods in all areas of scientific computing and numerical analysis.

Prof. Dr. Robert Schaback, University of Göttingen, NAM

CONTACT

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For further information see
http://num.math.uni-goettingen.de/meshless/

SCHEDULE

Workshop Part 1	Friday, January 14, 2011, Bunsenstraße 3–5
13:15–13:30	Welcome
13:30–14:00	Stefano De Marchi (Padova) Multivariate Newton Interpolation by Numerical Linear Algebra
14:00–14:30	Ding-Xuan Zhou (Hong Kong) Sparsity of some Learning Algorithms
14:30–15:00	Marko Weinrich (Göttingen) Mathematik im Alltag eines Unternehmens
15:00–16:00	Change of Venue and Coffee Break (at the Aula)

Colloquium	Aula am Wilhelmsplatz, Wilhelmsplatz 1
16:00–16:15	Ina Kersten (Dean, Göttingen) Welcome
16:15–16:45	Martin Buhmann (Gießen) Approximation in Göttingen: Some Remarks on Robert Schaback's Work on its Theory and Applications
16:45–17:45	Greg Fasshauer (Chicago) Positive Definite Kernels: Past, Present and Future
18:30	Dinner

Workshop Part 2	Saturday, January 15, 2011, Bunsenstraße 3–5
9:00–9:30	Klaus Böhmer (Marburg) A Nonlinear Discretization Theory with Applications to Meshfree Methods
9:30–10:00	Kurt Jetter (Hohenheim) The Multivariate Bernstein Basis Polynomials and their Kernels
10:00–10:30	Zongmin Wu (Shanghai) Generators, Multiquadric Generator, Quasi-Interpolation and Multiquadric Quasi-Interpolation
10:30–11:00	Coffee Break
11:00–11:30	Kai Hormann (Lugano) Barycentric Interpolation
11:30–12:00	Michael Scheuerer (Heidelberg) Kernel Interpolation beyond the Native Space — A Statisticians Perspective
12:00–13:30	Lunch Break
13:30–14:00	Christian Rieger (Bonn) Sampling inequalities and applications to regularization methods
14:00–14:30	Barbara Zwicknagl (Pittsburgh) Series kernels and their approximation properties
14:30–15:00	Armin Iske (Hamburg) A Hitchhiker's Guide through the Zoo of Radial Kernels
15:15	Robert Schaback (Göttingen) A Mathematical Excursion through Göttingen