Curriculum Vitae

Martin Berggren

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Contact data

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Educational background

2004	Docent, Scientific Computing, Uppsala University.
1996	Ph. D., Computational and Applied Mathematics, Rice University, Houston. Advisor: Professor Roland Glowinski. Thesis: *Optimal Control of Time Evolution Systems: Controllability Aspects and Numerical Algorithms.*
1992	M. Sc. (*Civilingenjör*), Engineering Physics, Uppsala University, Sweden

Employment history

2007–	Professor of Scientific Computing, Department of Computing Science, Umeå University.
1999–2007	Senior Lecturer, Department of Information Technology, Uppsala University (on 50 % leave of absence up to 06/06).
1995–2004	Research Scientist (*Forskare*) 1995–2004, Deputy Research Director (*Laborator*) 2004–2006, Department of Systems Technology, FOI, Swedish Defence Research Agency, Stockholm, Sweden (on 50 % leave of absence 1998–2006)
2002–2003	Limited-Time Member of Technical Staff, Computational Mathematics & Algorithms Section, Sandia National Laboratories, Albuquerque, USA. (On leave of absence from my Swedish employments during this time).
1998–1999	Researcher (50 %), Department of Scientific Computing, Uppsala University.
preceeding 1995	Engineer (part time), Uppsala University Hospital. Music teacher, Anderstorpsskolan, Skellefteå, Sweden.

Fields of interest

Scientific Computing and Numerical Analysis, in particular focused on Computational Design Optimization of systems governed by the equations of mechanics (solids, fluids, acoustics) and electromagnetics.

Publications

Author and co-author of about 50 scientific publications and book sections. Google scholar profile: http://scholar.google.com/citations?user=HT8lb1MAAAAJ

Main grants

Principal investigator of four VR (the Swedish Research Council) grants, 2004–2017. Investigator of one TFR (predecessor of the Swedish Research Council) grants 1999–2001.

Grant (co-applicant) from Swedish Foundation for Strategic Research (SSF), framework program in Applied Mathematics, 2014–2018.

Grant from Valutec Inc., Skellefteå 2011–2012.

Investigator for three EU projects in Aeronautics 2000–2007 (site responsibility and authoring of partner proposal).

Advisor experience

Fotios Kasolis: *The Material Distribution Method: Analysis and Acoustics Applications*, PhD 2014.

Rajitha Udawalpola: *Shape Optimization for Acoustic Wave Propagation Problems*, PhD 2010.

Eddie Wadbro, *Topology Optimization for Wave Propagation Problem*, PhD 2009.

Olivier Amoignon, *Numerical Methods for Aerodynamic Shape Optimization*, PhD 2006.

Emadeldeen Hassan: *Metallic Antenna Design Based on Topology Optimization Techniques*, Lic 2013.

Esubalewe Lakie Yedeg: *Control and Design of Engineering Mechanics Systems*, Lic 2013.

Currently advisor for four PhD students.

Other experience

Frequent reviewer for leading professional journals in my field.

Opponent at one doctoral dissertation. Member of the thesis committee at about 15 doctoral dissertations.

Plenary talk at the Enumath 2009 conference. Organized several invited minisymposia at international conferences.

Member of the Research Committee at the Faculty of Science and Technology, Umeå University, since 2008.

Member of the review panel for Engineering and Computer Science, Research Assessment Exercise for Latvia, 2013.

Member of the review panel for Mechanics, the Swedish Research Council, 2010.

Member of the European Science Foundation (ESF) review panel for evaluation of the Bulgarian Academy of Sciences, 2009.

Awarded the SIAM (Society for Industrial and Applied Mathematics) Student Paper Prize for an article based on my PhD thesis, 1995.

Courses taught

Scientific Computing II (Umeå, 2011–2014).

Numerical Methods for Engineers, later Scientific Computing I. (Umeå, 2008–2010)

The "modules" Finite Element Methods (2008–2012) and Optimization (2008–2009) within the National Graduate School of Scientific Computing (PhD course, Umeå).

Applied Scientific Computing (Uppsala, 2007).

Finite Element Methods: theory and applications. (PhD course, Uppsala, 2005)

Optimization (basic course in linear and nonlinear programming) (Uppsala, 2003–2006).

Computational Fluid Dynamics. Developed a new course together with Dan Henningson and co-taught it the first year it was given, (KTH, Royal Institute of Technology, 2001)

Numerical Analysis II. Covered Finite Element and Finite Difference methods, numerical methods for eigenvalue and least-squares problems, etc (Uppsala, 1999–2001).