

Carl Stefan Engblom

CONTACT INFORMATION [School of Computer Science and Communication,](#)
[Royal Institute of Technology](#)
Lindstedtsvägen 3, room 1526
S-100 44 Stockholm
Sweden

Office: +46-8-790 63 33
Fax: +46-8-790 09 30
Cell: +46-70-620 62 20
E-mail: steng@csc.kth.se
Web: www.csc.kth.se/~steng

PERSON Born August 7, 1976 in Stockholm, Sweden, but grew up in Linköping. Married to Märta Cullhed Engblom, three children.

POSITION Postdoctoral researcher in the Numerical Analysis group for a period of two years of full-time research with [Anna-Karin Tornberg](#) as the main advisor. Initially I worked in a project called “Simulation of fibers suspended in Stokes flow”, but I joined the Micro- and complex fluids project at [Linné FLOW centre](#) in the beginning of September 2009 to start with research on numerical simulation techniques for multiphase flows.

EDUCATION **Sep 2002–Dec 2008** Doctor of Philosophy in *Scientific Computing and Numerical Analysis* at the Division of Scientific Computing, [Department of Information Technology](#) at [Uppsala University](#), Uppsala, Sweden.

- Thesis: *Numerical Solution Methods in Stochastic Chemical Kinetics* presented the 28th of November 2008. Opponent: [Wilhelm Huisinga](#), Hamilton Institute, Ireland.
- Advisor: [Per Lötstedt](#), Uppsala University, 2nd advisor [Jan Hesthaven](#), Brown University.
- Keywords: stochastic models, chemical master equation, mesoscopic kinetics, Markov property, jump process, moment closure problem, spectral-Galerkin method, high dimensional problem, hybrid methods, time-parallel, homogenization.

Sep 2002–Sep 2006 Licentiate degree in *Scientific Computing*.

- Thesis: *Numerical Methods for the Chemical Master Equation* presented the 27th of September 2006. External reviewer: [Anders Szepessy](#), KTH.

Aug 1997–Feb 2002 Master of Science in *Engineering Physics with Scientific Computing* at [Uppsala University](#), Uppsala, Sweden.

- Thesis: *Multigrid preconditioners with applications to incompressible Navier-Stokes equations* presented the 1st of February 2002.
- Advisors: Daniel Bertilsson at [COMSOL AB](#) and [Michael Hanke](#) at KTH.

Jan 1997–Jun 1997 One semester of studies in *Theoretical philosophy* at the [University of Linköping](#), Linköping, Sweden.

Aug 1995–Nov 1996 Military service (Coastal ranger, Amphibious Battalion) at the [Vaxholm Coastal Artillery Regiment KA1](#).

–**Jun 1995** High-school diploma at Folkungaskolan, Linköping.

EMPLOYMENTS **Jan 2009–Present** PostDoc researcher at CSC/KTH, Stockholm.

Sep 2002–Dec 2008 PhD student with 20% teaching at the Department of Information Technology, Uppsala University, Uppsala.

Jun 2003–Aug 2003 Developer within the FEMLAB project at COMSOL, Stockholm.

Feb 2002–Aug 2002 Developer at COMSOL, MSc thesis work followed by a permanent position as a developer.

Jun 2000–Aug 2000 and **Jun 1999–Aug 1999** Summer-work as a developer at COMSOL.

Jun 1998–Aug 1998 Summer-work at Ericsson in Kista, Stockholm.

TEACHING - Pedagogical course [LH211V](#): “*Lecture Rhetoric and Presentation Design for College and University Teachers*” (5.0 hp) completed in the spring 2010.

- Pedagogical course [LH201V](#): “*Teaching and Learning in Higher Education*” (7.5 hp) completed in the autumn 2009.

- Supervisor of the software project [URDME](#): “Unstructured reaction-diffusion master equation” by Josef Cullhed (2008).

- As an assisting teacher at the Department of Information technology, Uppsala University:

- Scientific computing II (2008, 2005 and 2004),
- Scientific computing I (2003),
- Numerical analysis I (2002).

- Supervisor of the MSc-thesis work “Deterministic and stochastic methods for solving the master equation”, UPTEC Report F 05 017, School of Engineering, Uppsala University, by Magnus Ingelson (2005).

- Supervisor of the High-school thesis work “Godtycklig precision med C++” by Josef Cullhed (2006).

EXPERIENCE

ABROAD

- Visiting scholar at the [Division of Applied Mathematics](#), Brown University during 7 months (2006/2007).
- ERASMUS-student at [ENS Lyon](#), Lyon, France (2000/2001).

TALKS

“*Mesosopic Stochastic Modeling of Reaction-Diffusion Processes*” in the KCSE Seminar series at the KTH Computational Science and Engineering Centre in Stockholm, Sweden (2010).

“Simulation of stochastic reaction-diffusion processes on unstructured meshes” at the First Swedish meeting on Theory and Mathematics in Biology and Medicine held at the Centre for Interdisciplinary Mathematics in Uppsala, Sweden (2009).

“Simulation of stochastic reaction-diffusion processes on unstructured meshes”, invited talk given at the Fraunhofer-Chalmers Centre in Gothenburg, Sweden (2008).

“Parallel Solution of Multiscale Stochastic Chemical Kinetics”, at the Dahlquist Fellowship Workshop at KTH, Stockholm, Sweden (2008).

“Time-parallel Simulation of Stochastic Chemical Kinetics” at the ICNAAM conference at Kos, Greece (2008).

“Numerical solution methods for the master equation”, at the IHP-EU Network Workshop/Winter school 2005: *Breaking complexity* in Bad Honnef, Germany (2005).

AFFILIATION Member of [SIAM](#).