

Jacob B. Schroder

Siebel Center for Computer Science
University of Illinois at Urbana-Champaign
201 N. Goodwin Ave. Urbana, IL 61820

jschrod3-at-uiuc.edu
<http://www.cse.uiuc.edu/~jschrod3/>

Education

- **University of Illinois at Urbana-Champaign** Urbana, IL
PhD Student in the Department of Computer Science Fall 2004 – Present
Advised by Prof. Olson in the Numerical Analysis Group
- **Technische Universität München** Munich, Germany
One Year of Study as Programmstudent Fall 2003 – Spring 2004
Supported by Rotary International Scholarship
- **Furman University** Greenville, SC
B.S. Computer Science and Computer Science–Mathematics 1999 – 2003
Summa Cum Laude, Phi Beta Kappa

Work Experience

- **Sandia National Labs** Livermore, CA
Summer Intern Summer, 2007
Continued work with Dr. Tuminaro on strength-of-connection measures in algebraic multigrid and implemented an energy minimization algorithm for prolongator generation in ML
- **Sandia National Labs** Livermore, CA
Summer Intern Summer, 2006
Worked with Dr. Tuminaro on strength-of-connection measures in algebraic multigrid
- **Sandia National Labs** Livermore, CA
Summer Intern Summer, 2005
Worked with Dr. Tuminaro and Dr. Howle on pressure-convection diffusion preconditioners for incompressible Navier-Stokes problems
- **University of Illinois** Urbana, IL
Teaching Assistant 2004–2006
TA for both undergraduate and graduate level “Introduction to Numerical Analysis” courses
- **Furman University** Greenville, SC
Research Fellow Summer–Fall, 2002
Parallelized an atmospheric modeling tool that supported the NASA-TIMED satellite mission

Programming

- **Languages**

- *C, Python, Matlab*

- **Projects**

- *ML, PyAMG*

Contributed to ML, a multilevel solver package developed by Sandia National Labs, and to PyAMG, a python implementation of algebraic multigrid developed by our research group. In both cases, I implemented a new strength-of-connection algorithm and energy minimization prolongator generation algorithm.

Languages

- **German**

- *20/20 Points on the TestDaF (analogous to the TOEFL)*

Publications

- Howle V, Schroder J, Tuminaro R. *The Effect of Boundary Conditions within Pressure-Convection Diffusion Preconditioners*. Sandia National Labs Technical Report# 2006-4466. July, 2006.
- Schroder J, Tuminaro R, Olson L. *Generalized Strength of Connection in Algebraic Multigrid*. CSRI Summer Proceedings 2007. pp. 12-26. 2007.

References

Available Upon Request