

Scott Ladenheim

- Introduction** I am currently the head software engineer at Next Ocean B.V. in Delft, Netherlands. In my position, I build the C++ software that implements our ocean wave prediction algorithm. I also use Python to analyze the large-scale data sets generated during our offshore trials. My educational background is in computational mathematics with a focus on applied numerical linear algebra. Prior to working at Next Ocean, my research was on large-scale numerical simulations and the iterative solution of problems arising in computational science and engineering.
- Employment** **Next Ocean B.V.** September 2017 - present
Software Engineer
University of Manchester July 2015 - September 2017
Postdoctoral Research Associate
Project Description: Physical Design Tools for 3-D Integrated Circuits and Systems
Lawrence Livermore National Laboratory
Computational Science Intern
June 2013 - August 2013, June 2014 - August 2014
Temple University August 2014 - May 2015
Research Assistant
Temple University August 2009 - May 2014
Teaching Assistant
- Education** **Ph.D in Mathematics**, Temple University, April 2015
Advisor: Daniel B. Szyld
Title: Constraint Preconditioning of Saddle Point Problems
Ph.D Research, University of Bologna, September 2013 - December 2013
Advisor: Valeria Simoncini
M.A. in Mathematics, Temple University, August 2012
B.S. in Mathematics, Syracuse University, May 2009, Magna Cum Laude
- Honors and Awards** **Award for Outstanding Research 2015-2016**
College of Science and Technology, Temple University
Second Prize, Student Paper Competition
13th Copper Mountain Conference on Iterative Methods 2014
Indefinite Preconditioning of the Coupled Stokes-Darcy System
- Journal Publications** **Constraint Preconditioning for the Coupled Stokes-Darcy System**
Prince Chidyagwai, Scott Ladenheim, and Daniel B. Szyld,
SIAM Journal on Scientific Computing, vol. 38 (2016) pp. A668-A690
Multipreconditioned GMRES for Shifted Systems
Tania Bakhos, Peter K. Kitanidis, Scott Ladenheim, Arvind K. Saibaba, and Daniel B. Szyld, SIAM Journal on Scientific Computing, vol. 39 (2017) pp. S222-S247
The MTA: An Advanced and Versatile Thermal Simulator for Integrated Systems Scott Ladenheim, Yi-Chung Chen, Milan Mihajlović, and Vasilis F. Pavlidis, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, vol. 37 (2018) pp. 3123-3136
- Conference Publications** **IC Thermal Analyzer for Versatile 3-D Structures Using Multigrid Preconditioned Krylov Methods**
Scott Ladenheim, Yi-Chung Chen, Milan Mihajlović, and Vasilis F. Pavlidis,

Proceedings of the 35th International Conference on Computer-Aided Design, 2016, pp.123:1–123:8

Computationally Efficient Standard-Cell FEM-based Thermal Analysis
Yi-Chung Chen, Scott Ladenheim, Charalampos Kalargaris, Milan Mihajlović, and Vasilis F. Pavlidis, Proceedings of the ACM/IEEE International Conference on Computer-Aided Design, pp.490-495, November 2016.

Selected Presentations

Indefinite Preconditioning of the Coupled Stokes-Darcy System
13th Copper Mountain Conference on Iterative Methods (Prize Talk)
Copper Mountain Colorado, April 10, 2014

Indefinite Preconditioning of the Coupled Stokes-Darcy System
2014 SIAM Annual Meeting, Chicago, July 9, 2014

Indefinite Preconditioning of the Coupled Stokes-Darcy System
Mid Atlantic Numerical Analysis Day 2014
Temple University, November 7, 2014

Constraint Preconditioning for the Coupled Stokes-Darcy System
CCMA PDEs and Numerical Methods Seminar Series
Pennsylvania State University, February 27, 2015

Indefinite Preconditioning of the Coupled Stokes-Darcy System
2015 SIAM Conference on Computational Science and Engineering
Salt Lake City, March 15, 2015

Constraint Preconditioning for the Coupled Stokes-Darcy System
8th International Congress on Industrial and Applied Mathematics
Beijing, August 11, 2015

Constraint Preconditioning for the Coupled Stokes-Darcy System
20th Rutherford Appleton Laboratory
Didcot, October 22, 2015

Constraint Preconditioning for the Coupled Stokes-Darcy System
2015 SIAM Conference on Applied Linear Algebra
Atlanta, October 28, 2015

Constraint Preconditioning for Coupled Fluid Flow Problems
20th Conference of the International Linear Algebra Society
Leuven, July 14, 2016

MTA: Manchester Thermal Analyzer
University Booth: Design, Automation and Test in Europe 2017
Lausanne, March 27-31, 2017

Multipreconditioned GMRES for Shifted Systems (MPGMRES-Sh)
27th Biennial Conference on Numerical Analysis
Glasgow, June 28, 2017

Computer Skills C/C++, CUDA
Python
Git/Gitlab
Matlab

Languages English (mother tongue)
Dutch, Spanish (basic)