

Scott Ladenheim

Introduction

I am an analyst programmer for Tessella in Boston, Massachusetts where I analyze data and build software for our clients. My work at Tessella is project based. Therefore, I have worked in a number of roles ranging from independent data analyst to technical lead for the development of websites to store and organize consumer and clinical data.

Prior to working at Tessella, I worked as head software engineer at Next Ocean B.V. Next Ocean is a startup company in Delft, the Netherlands that is building software to predict the motions of a ship in real time based on its radar and sensor data. In my role, I developed and implemented part of the algorithms used in the predictions. In addition, I set up the server infrastructure as well as the continuous integration/development pipelines using GitLab.

My educational background is in computational mathematics with a focus on applied numerical linear algebra. My PhD research was on large-scale numerical simulations and the fast iterative solution of problems arising in computational science and engineering. After my PhD, I worked as a postdoctoral research associate at the University of Manchester where I built software to compute thermal maps of 3-D integrated circuits.

Employment

Tessella August 2019 - present
Analyst Programmer
Next Ocean B.V. September 2017 - July 2019
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
June 2013 - August 2013, June 2014 - August 2014
Computational Science Intern
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 Visiting 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

Computer Skills C/C++, CUDA, C#
Python, R, SQL
Angular, HTML, CSS
Tensorflow
Azure
Git/GitLab
Matlab

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, 2016, pp.490-495.

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
2015 SIAM Conference on Computational Science and Engineering
Salt Lake City, March 15, 2015

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

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

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