Amanda Bienz

Personal Data

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Selected Publications

In Preparation	Reducing Communication in Algebraic Multigrid with Multi-step Node-Aware Communication, In Preparation
To Appear	Node Aware Sparse Matrix-Vector Multiplication **JPDC** To Appear
2018	Improving Performance Models for Irregular Point-to-Point Communication, **Proceedings of the 25th European MPI Users' Group Meeting**.
2016	Reducing Parallel Communication in Algebraic Multigrid Through Sparsification, **SIAM J. Sci. Comput.**, Vol. 38, No, 5. Pg. S332-S357. Supplementary material.

Selected Presentations

November 2017	*Reducing Communication Costs in the Parallel Algebraic Multigrid* **Doctoral Showcase at SuperComputing 2017** Denver, CO
November 2016	*Reducing Communication Costs in the Parallel SpMV* **Supercomputing 2016** Salt Lake City, UT
June 2016	*Reducing Communication in Sparse Iterative and Direct Solvers* 5^{th} **JLESC Workshop**, Lyon, France
April 2016	*Topology-Aware Performance Modeling of Parallel SpMVs* **17th SIAM Conference on Parallel Processing for Scientific Computing** Paris, France
November 2014	*Reducing Network Contention Associated with Parallel Algebraic Multigrid* ACM Student Research Competition at **Supercomputing 2014** New Orleans, LA

Selected Work Experience

Aug 2018 - Present	**Postdoctoral Researcher at *University of Illinois at Urbana -Champaign*, Urbana, IL** Postdoctoral Researcher for Luke Olson, funded by ExxonMobil
April - July 2016	**NSF GROW Participant at *INRIA Paris*, Paris, France** Researched reducing the cost of parallel communication associated with sparse matrix-vector multiplication through the use of topology-aware methods.
2013, 2014	**Summer Intern at *Lawrence Livermore National Laboratory*, Livermore, CA** Researched trade-off between communication and convergence of parallel AMG Implemented hybrid and sparse Galerkin methods, similar to non-Galerkin.

2012 - 2017	**NSF Fellow at *University of Illinois at Urbana -Champaign*, Urbana, IL** NSF GRFP Fellow
Aug - Dec 2013	**Teaching Assistant at *University of Illinois at Urbana -Champaign*, Urbana, IL** Teaching Assistant for Numerical Analysis, CS 450

Software

2018	Node-Aware MPI Library
2017	RAPtor: parallel algebraic multigrid v0.1

Education

In Progress	Postdoc in *Computer Science*, **University of Illinois at Urbana-Champaign** Urbana, IL
August 2018	PhD in *Computer Science*, **University of Illinois at Urbana-Champaign** Urbana, IL, Reducing communication in sparse solvers
May 2012	Bachelor of Science in *Computer Science & Mathematics*, **Elon University**, Elon, NC

Awards and Accomplishments

2012-present	National Science Foundation Graduate Research Fellow
2015	National Science Foundation GROW Awardee
November 2014	First place winner of ACM Student Research Competition, Graduate Section **Supercomputing 2014**