

Andrew J. Younge, Ph.D

CONTACT INFORMATION	Scalable System Software Center for Computing Research Sandia National Laboratories P. O. Box 5800 MS 1319 Albuquerque, NM 87185	<i>Email:</i> ajyounge@sandia.gov <i>Alt Email:</i> ajy4490@gmail.com <i>Web:</i> www.ajyounge.com <i>Phone:</i> +1 (505) 844 - 6244
CITIZENSHIP	USA	
RESEARCH INTERESTS	Distributed Systems, Virtualization, High Performance Computing, Cloud Computing, Systems Energy Efficiency, Grid Computing, Bioinformatics, Internet of Things, Computer Architecture	
EDUCATION	Indiana University , Bloomington, Indiana USA	
	Ph.D, Computer Science	Aug 2010 – Oct 2016
	<ul style="list-style-type: none">• Dissertation: <i>Architectural Principles of Distributed High Performance Virtual Clusters</i>• Ph.D Advisor: Geoffrey C. Fox• Committee Members: Judy Qiu, D. Martin Swamy, Thomas Sterling• Area of Study: Cloud Computing, High Performance Computing, Bioinformatics	
	Rochester Institute of Technology , Rochester, New York USA	
	M.S., Computer Science	Aug 2008 – May 2010
	<ul style="list-style-type: none">• Thesis: <i>Towards a Green Framework for Cloud Data Centers</i>• Advisor: Warren Carithers• Area of Study: Cloud Computing & Grid Computing	
	B.S., Computer Science	Aug 2004 – May 2008
	<ul style="list-style-type: none">• Emphasis on Operating Systems and Networks• Minor in Psychology	
EXPERIENCE	Sandia National Laboratories , Albuquerque, New Mexico USA	
	<i>Senior Member of Technical Staff</i>	Oct 2016 to present
	<ul style="list-style-type: none">• Member of Scalable System Software department within the Center for Computing Research.• Participating in DOE NNSA ASC Advanced Technology Development and Mitigation program (ATDM) and Exascale Computing Project (ECP).• Specializing in system software, virtualization, and energy efficient HPC.	
	Indiana University , Bloomington, Indiana USA	
	<i>Graduate Researcher & Fellowship</i>	Apr 2010 to Oct 2016
	<ul style="list-style-type: none">• Member of the Pervasive Technology Institute and Community Grids Laboratory under the direction of Dr. Geoffrey C. Fox.• Researcher for the NSF FutureGrid project, a high-performance distributed cloud and grid testbed for advanced scientific research.• Associate Instructor for Indiana University Computer Science Department classes CSCI-P434 - Distributed Systems and CSCI-B649 - Cloud Computing.	

- System administrator of Bravo, Delta, India, Foxtrot, Romeo, and Sierra super-computing and HPC clusters, along with OpenStack, Eucalyptus, and ScaleMP deployments.
- Collaborator on the [Truthy](#) project focusing on Big Data challenges within HPC.

MITRE Corporation, McLean, Virginia USA

Senior Computer Scientist

Mar 2015 to Jun 2016

- Member of the MITRE Corporation's Center for National Security.
- In J84B Simulation Engineering department, supporting the Live-Synthetic Training and Test Evaluation Enterprise Architecture efforts for the U.S. Army PEO STRI.
- Specialized in Cloud Computing strategies and techniques.

USC Information Sciences Institute, Arlington, Virginia USA

Visiting Researcher

May to Aug 2012 & 2013

- Researcher on the DODCS project, a heterogeneous high performance cloud computing system.
- Created High Performance GPGPU and InfiniBand IaaS cloud infrastructure using OpenStack and Xen.
- Research in virtualization performance, scalability, Exascale systems, and GPGPU architectures.
- Visiting USC/ISI East from May 2012 to Aug 2012 and May 2013 to Aug 2013

Rochester Institute of Technology, Rochester, New York USA

Graduate Researcher

Jun 2008 to Mar 2010

- Developed Green-Cloud Framework for next generation data centers.
- Helped coordinate other programming activities within the group.
- Lead developer on the Cyberaide projects.
- Architect of the Cyberaide Shell and Web Services layer.
- Coordinator of other Masters and Undergraduate students on Grid projects and coursework.
- Includes current M.S. research and course work.

Research Assistant - Psychology Department

Jun 2007 to Sep 2008

- Managed all computing aspects associated with a research project on how social rumors can propagate over time in the context of complex social networks.
- Upgraded and maintained current client-server experiment application in Java and developed support services in PHP and Python.

Student Lab Instructor

Jun 2005 to Sep 2006

- Instructed labs for CS1 through CS4 courses and assisted in lectures for Professor Sean Strout.
- Provided tutoring sessions and held office hours at the Computer Science Tutoring Center.
- Designed and implemented a new CS2 project.
- Created tutorials for software programs and set up various services used by incoming students.

University of Maryland, College Park, Maryland USA

Research Assistant - The Lattice Project

Nov 2006 to May 2007

- Worked in the Laboratory for Molecular Evolution in the Center for Bioinformatics and Computational Biology under the direction of Michael P. Cummings, PhD.
- Developer for the Lattice Project, a Grid computing resource within the Center for Bioinformatics & Computational Biology.
- Designed and implemented a common interface between the main Grid system (Globus) and the Desktop Grid server (BOINC).
- Maintained the project, desktop grid, and lab websites.

AWARDS

Indiana University

- Persistent Systems Fellow - School of Informatics and Computing **2013 – 2016**
- Student Fellow at the Center for Applied Cybersecurity Research **2011**
- Graduate Research Assistantship **2010 – 2013**

Google

2011

- GSoC Award "Deployment of DemoGrid on FutureGrid Resources" in conjunction with the Globus Alliance.
- Worked on deploying the first release of Globus Provision with the Computation Institute at UC/ANL.

Open Science Grid

Jul 2009

- Open Science Grid Scholarship to attend the International Summer School on Grid Computing (ISSGC) in Nice, FR.

Rochester Institute of Technology

- Graduate Researcher Scholarship **2008 – 2010**
- Undergraduate Academic Scholarship **2006 – 2008**
- Deans List **2004 – 2008**

PUBLICATIONS

Scholarly Impact - H-Index: 13 — G-Index: 35 — Citations: 1741 (Google Scholar)

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Book Chapters and Journal Articles

- [1] C. A. Davis, G. L. Ciampaglia, L. M. Aiello, K. Chung, M. D. Conover, E. Ferrara, A. Flammini, G. C. Fox, X. Gao, B. Goncalves, P. A. Grabowicz, K. Hong, P.-M. Hui, S. McCaulay, K. McKelvey, M. R. Meiss, S. Patil, C. Peli Kankanamalage, V. Pentchev, J. Qiu, J. Ratkiewicz, A. Rudnick, B. Serrette, P. Shiralkar, O. Varol, L. Weng, T.-L. Wu, **A. J. Younge**, and F. Menczer, "Osome: the iuni observatory on social media," *PeerJ Computer Science*, vol. 2, p. e87, Oct. 2016. [Online]. Available: <https://doi.org/10.7717/peerj-cs.87>
- [2] N. Keith, A. E. Tucker, C. E. Jackson, W. Sung, J. I. L. Lled, D. R. Schrider, S. Schaack, J. L. Dudycha, M. S. Ackerman, **A. J. Younge**, J. R. Shaw, and M. Lynch, "High mutational rates of large-scale duplication and deletion in daphnia pulex," *Genome Research*, 2015. [Online]. Available: <http://genome.cshlp.org/content/early/2015/10/30/gr.191338.115.abstract>

- [3] N. DiFonzo, J. Suls, J. W. Beckstead, M. J. Bourgeois, C. M. Homan, S. Brougher, **A. J. Young**e, and N. Terpstra-Schwab, “Network structure moderates intergroup differentiation of stereotyped rumors,” *Social Cognition*, vol. 32, no. 5, pp. 409–448, 2014.
- [4] X. Gao, E. Roth, K. McKelvey, C. Davis, **A. J. Young**e, E. Ferrara, F. Menczer, and J. Qiu, “Supporting a Social Media Observatory with Customizable Index Structures-Architecture and Performance,” in *Cloud Computing for Data Intensive Applications*, 2014.
- [5] **A. J. Young**e, G. von Laszewski, L. Wang, and G. C. Fox, “Providing a Green Framework for Cloud Based Data Centers,” in *The Handbook of Energy-Aware Green Computing*, I. Ahmad and S. Ranka, Eds. Chapman and Hall/CRC Press, 2012, vol. 2, ch. 17.
- [6] N. Stupak, N. DiFonzo, **A. J. Young**e, and C. Homan, “SOCIALSENSE: Graphical User Interface Design Considerations for Social Network Experiment Software,” *Computers in Human Behavior*, vol. 26, no. 3, pp. 365–370, May 2010.
- [7] L. Wang, G. von Laszewski, **A. J. Young**e, X. He, M. Kunze, and J. Tao, “Cloud Computing: a Perspective Study,” *New Generation Computing*, vol. 28, pp. 63–69, Mar 2010. [Online]. Available: <http://cyberaide.googlecode.com/svn/trunk/papers/10-cloudcomputing-NGC/vonLaszewski-10-NGC.pdf>

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Conference and Workshop Proceedings

- [8] **A. J. Young**e, K. Pedretti, R. E. Grant, and R. Brightwell, “Enabling Diverse Software Stacks on Supercomputers using High Performance Virtual Clusters,” in *To appear in the Proceedings of the 2017 IEEE International Conference on Cluster Computing (Cluster 2017)*. IEEE, 2017.
- [9] **A. J. Young**e, C. Reidy, R. Henschel, and G. C. Fox, “Evaluation of SMP Shared Memory Machines for Use With In-Memory and OpenMP Big Data Applications,” in *IEEE International Workshop on High-Performance Big Data Computing at the 30th IEEE International Parallel and Distributed Processing Symposium*, 2016.
- [10] **A. J. Young**e, J. P. Walters, S. P. Crago, and G. C. Fox, “Supporting high performance molecular dynamics in virtualized clusters using iommu, sr-iov, and gpudirect,” in *Proceedings of the 11th ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments*, ser. VEE ’15. ACM, 2015, pp. 31–38. [Online]. Available: <http://doi.acm.org/10.1145/2731186.2731194>
- [11] J. P. Walters, **A. J. Young**e, D.-I. Kang, K.-T. Yao, M. Kang, S. P. Crago, and G. C. Fox, “GPU-Passthrough Performance: A Comparison of KVM, Xen, VMWare ESXi, and LXC for CUDA and OpenCL Applications,” in *Proceedings of the 7th IEEE International Conference on Cloud Computing (CLOUD 2014)*, IEEE. Anchorage, AK: IEEE, 06/2014 2014.
- [12] M. Musleh, V. Pai, J. P. Walters, **A. J. Young**e, and S. P. Crago, “Bridging the Virtualization Performance Gap for HPC using SR-IOV for InfiniBand,” in *Proceedings of the 7th IEEE International Conference on Cloud Computing (CLOUD 2014)*, IEEE. Anchorage, AK: IEEE, 06/2014 2014.
- [13] **A. J. Young**e and G. C. Fox, “Advanced Virtualization Techniques for High Performance Cloud Cyberinfrastructure,” in *Doctoral Symposium at 14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2014)*, IEEE. Chicago, IL: IEEE, 05/2014 2014.

- [14] **A. J. Younge**, J. P. Walters, S. Crago, and G. C. Fox, "Evaluating GPU Passthrough in Xen for High Performance Cloud Computing," in *High-Performance Grid and Cloud Computing Workshop at the 28th IEEE International Parallel and Distributed Processing Symposium*, IEEE. Phoenix, AZ: IEEE, 05/2014 2014.
- [15] J. Diaz, G. von Laszewski, F. Wang, **A. J. Younge**, and G. C. Fox, "Future-Grid Image Repository: A Generic Catalog and Storage System for Heterogeneous Virtual Machine Images," in *Proceedings of Third IEEE International Conference on Cloud Computing Technology and Science (CloudCom2011)*, IEEE. Athens, Greece: IEEE, 12/2011 2011.
- [16] G. von Laszewski, J. Diaz, F. Wang, **A. J. Younge**, A. Kulshrestha, and G. Fox, "Towards generic FutureGrid image management," in *Proceedings of the 2011 TeraGrid Conference: Extreme Digital Discovery*, ser. TG '11. Salt Lake City, UT: ACM, 2011, pp. 15:1–15:2. [Online]. Available: <http://doi.acm.org/10.1145/2016741.2016758>
- [17] **A. J. Younge**, R. Henschel, J. T. Brown, G. von Laszewski, J. Qiu, and G. C. Fox, "Analysis of Virtualization Technologies for High Performance Computing Environments," in *Proceedings of the 4th International Conference on Cloud Computing (CLOUD 2011)*. Washington, DC: IEEE, July 2011.
- [18] **A. J. Younge**, V. Periasamy, M. Al-Azdee, W. Hazlewood, and K. Connelly, "ScaleMirror: A Pervasive Device to Aid Weight Analysis," in *Proceedings of the 29th International Conference Extended Abstracts on Human Factors in Computing Systems (CHI2011)*. Vancouver, BC: ACM, May 2011.
- [19] J. Diaz, **A. J. Younge**, G. von Laszewski, F. Wang, and G. C. Fox, "Grappling Cloud Infrastructure Services with a Generic Image Repository," in *Proceedings of Cloud Computing and Its Applications (CCA 2011)*, Argonne, IL, Mar 2011.
- [20] G. von Laszewski, G. C. Fox, F. Wang, **A. J. Younge**, A. Kulshrestha, and G. Pike, "Design of the FutureGrid Experiment Management Framework," in *Proceedings of Gateway Computing Environments 2010 at Supercomputing 2010*. New Orleans, LA: IEEE, Nov 2010. [Online]. Available: <http://grids.ucs.indiana.edu/ptliupages/publications/vonLaszewski-10-FG-exp-GCE10.pdf>
- [21] **A. J. Younge**, G. von Laszewski, L. Wang, S. Lopez-Alarcon, and W. Carithers, "Efficient Resource Management for Cloud Computing Environments," in *Proceedings of the International Conference on Green Computing*. Chicago, IL: IEEE, Aug 2010. [Online]. Available: <http://dx.doi.org/10.1109/GREENCOMP.2010.5598294>
- [22] N. DiFonzo, M. J. Bourgeois, J. M. Suls, C. Homan, **A. J. Younge**, N. Schwab, M. Frazee, S. Brougher, and K. Harter, "Network Segmentation and Group Segregation Effects on Defensive Rumor Belief Bias and Self Organization," in *Proceedings of the George Gerbner Conference on Communication, Conflict, and Aggression*, Budapest, Hungary, May 2010.
- [23] G. von Laszewski, L. Wang, **A. J. Younge**, and X. He, "Power-Aware Scheduling of Virtual Machines in DVFS-enabled Clusters," in *Proceedings of the 2009 IEEE International Conference on Cluster Computing (Cluster 2009)*. New Orleans, LA: IEEE, Sep 2009.
- [24] G. von Laszewski, **A. J. Younge**, X. He, K. Mahinthakumar, and L. Wang, "Experiment and Workflow Management Using Cyberaide Shell," in *Proceedings of the 4th International Workshop on Workflow Systems in e-Science (WSES 09) with 9th IEEE/ACM International Symposium on Cluster Computing and the Grid*

(CCGrid 09). IEEE, May 2009. [Online]. Available: <http://cyberaide.googlecode.com/svn/trunk/papers/09-gridshell-ccgrid/vonLaszewski-ccgrid09-final.pdf>

- [25] L. Wang, G. von Laszewski, J. Dayal, X. He, **A. J. Younge**, and T. R. Furlani, "Towards Thermal Aware Workload Scheduling in a Data Center," in *Proceedings of the 10th International Symposium on Pervasive Systems, Algorithms and Networks (ISPAN2009)*, Kao-Hsiung, Taiwan, Dec 2009. [Online]. Available: <http://cyberaide.googlecode.com/svn/trunk/papers/09-greenit-ispan1/vonLaszewski-ispan1.pdf>
- [26] G. von Laszewski, F. Wang, **A. J. Younge**, X. He, Z. Guo, and M. Pierce, "Cyberaide JavaScript: A JavaScript Commodity Grid Kit," in *Proceedings of the Grid Computing Environments 2007 at Supercomputing 2008*. Austin, TX: IEEE, Nov 2008. [Online]. Available: <http://cyberaide.googlecode.com/svn/trunk/papers/08-javascript/vonLaszewski-08-javascript.pdf>
- [27] G. von Laszewski, F. Wang, **A. J. Younge**, Z. Guo, and M. Pierce, "JavaScript Grid Abstractions," in *Proceedings of the Grid Computing Environments 2007 at Supercomputing 2007*. Reno, NV: IEEE, Nov 2007. [Online]. Available: <http://cyberaide.googlecode.com/svn/trunk/papers/07-javascript/vonLaszewski-07-javascript.pdf>

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Poster Sessions

- [28] **A. J. Younge** and G. Fox, "High Performance Molecular Dynamics in Cloud Infrastructure with SR-IOV & GPUDirect," Poster at the International Supercomputing Conference, Jun 2016.
- [29] **A. J. Younge** and G. C. Fox, "Advanced Virtualization Techniques for High Performance Cloud Cyberinfrastructure," Poster session at 14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2014), Chicago, IL, 05/2014 2014.
- [30] **A. J. Younge**, J. T. Brown, R. Henschel, J. Qiu, and G. C. Fox, "Performance Analysis of HPC Virtualization Technologies within FutureGrid," Emerging Research at CloudCom 2010, Dec 2010.
- [31] **A. J. Younge**, X. He, F. Wang, L. Wang, and G. von Laszewski, "Towards a Cyberaide Shell for the TeraGrid," Poster at TeraGrid Conference, Jun 2009.
- [32] **A. J. Younge**, F. Wang, L. Wang, and G. von Laszewski, "Cyberaide Shell Prototype," Poster at ISSGC 2009, Jul 2009.

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Thesis

- [33] **A. J. Younge**, "Architectural Principles and Experimentation of Distributed High Performance Virtual Clusters," Ph.D. dissertation, Indiana University, Oct 2016.
- [34] **A. J. Younge**, "Towards a Green Framework for Cloud Data Centers," Master's thesis, Rochester Institute of Technology, May 2010.

PRESENTATIONS

Initial Experiences with Deploying Singularity on a Cray XC Supercomputer, VHPC Workshop, International Supercomputing Conference, Jun 2017

Architectural Principles and Experimentation of Distributed High Performance Virtual Clusters, Indiana University PhD Defense, Oct 2016

Architectural Principles and Experimentation of Distributed High Performance Virtual Clusters, Lawrence Berkeley National Laboratory, Jul 2016

High Performance Molecular Dynamics in Cloud Infrastructure with SR-IOV & GPUDirect, International Supercomputing Conference, Jun 2016

Evaluation of SMP Shared Memory Machines for Use With In-Memory and OpenMP Big Data Applications, High Performance Big Data Computing Workshop, IPDPS, May 2016

Architectural Principles and Experimentation of Distributed High Performance Virtual Clusters, Sandia National Laboratories, Apr 2016

Supporting High Performance Molecular Dynamics in Virtualized Clusters using IOMMU, SR-IOV, and GPUDirect, Virtual Execution Environments, Mar 2015

Building High Performance Cloud Infrastructure to Support Molecular Dynamics Simulations, MITRE Corporation, Jan 2015

Advanced Virtualization Techniques for High Performance Cloud Cyberinfrastructure, Indiana University, Aug 2014

GPU Passthrough Performance: A Comparison of KVM, Xen, VMWare ESXi, and LXC for CUDA and OpenCL Applications, IEEE CLOUD, Jun 2014

Advanced Virtualization Techniques for High Performance Cloud Cyberinfrastructure, IEEE CCGrid, May 2014

Evaluating GPU Passthrough in Xen for High Performance Cloud Computing, HPGC Workshop, IPDPS, May 2014

ScaleMP at Indiana University, ScaleMP Booth at Supercomputing 2013, Nov 2013

Towards Constructing High Performance Cloud Infrastructure, University of Southern California, Aug 2013

The State of Cloud Computing in Distributed Systems, Indiana University, Qualification Exam, Nov 2012

Towards GPUs on Cloud Infrastructure, Science Cloud Summer School, Aug 2012

FutureGrid: A Cloudy HPC Testbed, University of Southern California, Seminar Series, Jul 2012

Using HPC, IaaS, and Hadoop within FutureGrid, TeraGrid Conference, Jul 2011

Analysis of Virtualization Technologies for High Performance Computing Environments, IEEE CLOUD, Jul 2011

FutureGrid, IEEE CCGrid 2011, May 2011

Creating Research Posters, Indiana University, Apr 2011

A Tutorial on the FutureGrid Project, IEEE CloudCom 2010, Dec 2010

The FutureGrid Project, IU Booth at Supercomputing 2010, Nov 2010

Efficient Resource Management for Cloud Computing Environments, IGCC, Aug 2010

Towards a Green Framework for Cloud Data Centers, Rochester Institute of Technology, May 2010

Towards Efficiency Enhancements in Cloud Computing, Fermi National Accelerator Laboratory, Mar 2010

Security Threats to Mobile Devices, Rochester Institute of Technology, Feb 2010

Overview of the NIST SHA-3 Hash Contest, Rochester Institute of Technology, Jan 2010

Towards a Green Framework for Cloud Data Centers, Purdue University, Jan 2010

Simple Classification Performs Well on Most Commonly Used Datasets, Rochester Institute of Technology, Dec 2009

Power Aware Scheduling in DVFS-Enabled Clusters, IEEE Cluster, Sep 2009

Efficient Resource Management for Cloud Computing Environments, Rochester Institute of Technology, May 2009

Grid Deployments and Cyberinfrastructure, Rochester Institute of Technology, Dec 2008

Introduction to BOINC, Bar Camp Rochester, Apr 2008

Overview of the Globus Toolkit Version 4, Rochester Institute of Technology, Mar 2008

SERVICE

Program Committee Member, International Workshop on Energy Efficient Supercomputing (E2SC), 2017

Program Committee Member, Symposium on High Performance Interconnects (HotI), 2017

Reviewer, IEEE International Conference on High Performance Computing and Communications, 2017

Program Committee Member, Workshop on Virtualization in High Performance Cloud Computing, 2017

Reviewer, IEEE Transactions on Network and Service Management, 2016

Reviewer, IEEE Transactions on Services Computing, 2015

Reviewer, Concurrency and Computation: Practice and Experience, 2010, 2012 - 2015

Reviewer, Journal of Systems and Software. 2012, 2014, 2015

Reviewer, Simulation Modelling Practice and Theory, 2015

Associate Instructor, Computer Science - P434 Distributed Systems, 2014, 2015

Reviewer, The Journal of Supercomputing, 2010, 2014 - 2015

Reviewer, IEEE Transactions on Network and Service Management, 2014

Reviewer, 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), 2015

Reviewer, IEEE Cloud Computing, 2014

Reviewer, Simulation Modelling Practice and Theory, 2014

Reviewer, Sustainable Computing, 2014

Reviewer, Computing, 2014

Reviewer, 14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), 2014

Reviewer, International Journal of Risk Assessment and Management, 2013 - 2014

Committee Member, Indiana Statewide IT Conference, 2013, 2014

SCinet Volunteer, Supercomputing Conference (SC), 2009, 2012 - 2013

Reviewer, Parallel and Cloud Computing Research, 2013

Reviewer, International Journal of Computational Science and Engineering, 2012 - 2013

Reviewer, IEEE Transactions on Parallel and Distributed Computing, 2012

Graduate Mentor, Indiana University Research Methods INFO-I399, 2011 - 2012

Editorial Board Member, Journal of Cloud Computing Advances, Systems and Applications, 2010 - 2011

Reviewer, Journal of Network and Systems Management, 2011

Student Volunteer, IEEE CloudCom, 2010

ISCnet Volunteer, International Supercomputing Conference, 2009 - 2010

Student Volunteer, IEEE Cluster Computing, 2009

TECHNICAL
EXPERTISE

Extensive experience in Distributed Systems, Networking, and Operating Systems

Cloud & Virtualization Technologies: Amazon EC2 & S3, OpenStack, Google App Engine, ScaleMP vSMP, Eucalyptus, Nimbus, OpenNebula, Apache Hadoop Map Reduce, Apache Storm, Apache Kafka, Twister, VMWare, Xen, KVM, Virtual Box

Middleware/Grid Systems: Globus Toolkit, Moab, BOINC, UNICORE, g-Lite, Condor-G, Java CoG Kit

Local Resource Management Systems: Moab/Maui/Torque, SLURM, xCAT, Condor, Rocks

TECHNICAL SKILLS Programming Languages: Python, Java, C, C++, C#, PHP, Perl, x86 Assembly Language, VHDL, Bash

Other Languages: SQL, XML, JSON, HTML

Software Development Tools: VI, Eclipse, Matlab, xCode, Visual Studio, Emacs

Operating Systems: All GNU/Linux distros with specialization in Red Hat & Debian variants, Apple OS X, Solaris, FreeBSD, Microsoft Windows 8/7/Server2008/XP/2000

Authoring Applications: L^AT_EX, Microsoft Office, OpenOffice