

ADAM DECONINCK

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<http://www.ajdecon.org/>

Summary

Engineer and scientist with expertise in high-performance computing in conventional and cloud deployments. Background in academic and commercial research with a heavy focus on computational analysis and “Big Data” science. Proficient in rapid deployment of dynamically-allocated computational resources, and tuning cluster configuration for specific applications. Excellent communications skills and ability to support researchers on HPC systems.

Professional Experience

Systems Engineer @ R Systems NA, Inc.

November 2010–present

- Design, deployment, administration and support for private, on-demand HPC clusters.
- Performance tuning of applications in domains including meteorology, computational fluid dynamics, finite element analysis, bioinformatics, geophysics and actuarial science.
- Project lead on two long-term HPC deployments under 24/7 production load:
 - 1000 cores, Windows HPC 2008 R2, actuarial application (MG-ALFA).
 - 600 cores (burst capacity up to 1000), RHEL 5.6, meteorology application (WRF).
- Project lead or backup on over a dozen smaller and/or short-term deployments (mix of Linux and Windows).
- R&D work on automated deployment of self-service “cloud” HPC clusters tuned for specific applications.
- Outreach and development for open-source projects relevant to our technical interests.
- Support and training for academic and commercial researchers with diverse requirements and experiences levels.

Graduate Research Assistant @ University of Illinois

August 2007–November 2010

- Researched problems in microfluidics, colloidal physics, 3D particle tracking and DNA genotyping.
- Performed computational analysis of microscopy images to extract physical and chemical data using custom software.
- Trained and supervised undergraduate researchers and helped maintain shared resources.
- Awarded the National Defense Science and Engineering Graduate Fellowship (2008–2010).

Contractor @ Dow Corning Corporation

May 2006–August 2006

- Assembled hardware and developed software for an automated test station for testbed OLED devices.
- OLED test station and software were still in active use as of project completion in 2009.

Undergraduate Research Assistant @ Michigan State University

June 2005–August 2005

Undergraduate Research Assistant @ Michigan Technological University

June 2004–May 2005

Other Experience

- **Warcwulf 3.0:** Developer and tester for the open-source HPC cluster manager from Lawrence Berkeley National Lab.
- **Presentations and Publications:** Academic publications and presentations to the research and engineering communities on topics in science and HPC. Full list at <http://www.ajdecon.org/projects/pubs>.
- **ImageJ plugins:** Developed mathematical morphology processing routines for the popular image-processing tool, available at http://www.github.com/ajdecon/imagej_morphology.
- **Fencing:** Active épée fencer. Former President of the Michigan Tech Fencing Club and assistant instructor at The Point Fencing Club and School in Champaign, IL.

Skills and Knowledge

- Production programming experience in Python, Perl, Java, Matlab, and bash.
- Classroom or personal programming experience in Fortran, C, R, and Scala.
- Background in scientific computing, data analysis, and commercial and academic research.
- Design, provisioning and configuration of HPC clusters with Ethernet and Infiniband networks.
- HPC tools for Linux (Perceus/Warcwulf, Cobbler, PBS, Grid Engine, Hadoop) and Windows (HPC Pack).
- Parallel/distributed filesystems including Lustre, PVFS2 and HDFS.
- Virtualization with KVM, Xen and Hyper-V, private clouds (OpenStack) and public clouds (EC2).

Education

M.S. in Materials Science and Engineering–University of Illinois

December 2010

B.S. in Physics–Michigan Technological University

May 2007