# ADAM DECONINCK

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## Summary

Engineer with expertise in high-performance computing and cloud-based solutions for scientific computing. Background in academic and commercial research with a heavy focus on computational analysis. Proficient in rapid deployment of dynamically-allocated computational resources, and tuning the solution for best performance in a specific application. Excellent communications skills and ability to support researchers on HPC systems.

## Professional Experience

**Systems Engineer**–R Systems NA, Inc.                                      November 2010–present
Champaign, IL
- Engineer/sysadmin at a large, complex site providing on-demand access to private HPC clusters.
- Provisioning, administration and performance tuning of HPC clusters for applications in domains including meteorology, computational fluid dynamics, finite element analysis, bioinformatics, geophysics and actuarial science.
- Project lead on two long-term HPC deployments running 24/7:
    - 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 or short-term deployments.
- Development for infrastructure and automation of self-service "cloud" HPC clusters.
- Support and training for academic and commercial researchers with diverse requirements and experiences levels.

**Graduate Research Assistant**–University of Illinois                        August 2007–November 2010
Urbana, IL
- 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
Midland, MI
- 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
East Lansing, MI

**Undergraduate Research Assistant**–Michigan Technological University        June 2004–May 2005
Houghton, MI

## Skills and Knowledge

- Production programming experience in Python, Perl, Java, Matlab, and bash.
- Classroom or personal programming experience in Fortran, C, and R.
- Background in scientific computing, data analysis, and commercial and academic research.
- HPC tools for Linux (Perceus/Warewulf, Cobbler, PBS, Grid Engine, Hadoop) and Windows (HPC Pack).
- Parallel/distributed filesystems including Lustre, PVFS2 and HDFS.
- Experienced with physical HPC clusters (including ethernet and Infiniband networking) and virtual clusters (EC2).
- Extensive experience supporting scientists, engineers, and other users with varied levels of experience.

## Education

**M.S. in Materials Science and Engineering**–University of Illinois          December 2010
**B.S. in Physics**–Michigan Technological University                         May 2007

## Other Experiences

- Participating in testing and development of Warewulf, the open-source HPC manager from Berkeley National Lab.
- Presentations to the research community and publications in *Physical Review Letters*, *Chemistry*, and others: Full list at http://www.ajdecon.org/projects/pubs.
- Developed mathematical morphology plugins for the popular ImageJ image-processing tool: Code and binaries at http://www.github.com/ajdecon/imagej_morphology.
- Strong professional interest in "big data", computational analysis and scientific computing.
- Attended the "Big Data for Science" workshop at Indiana University in July 2010.
- President of the Michigan Tech Fencing Club and assistant instructor at the Point Fencing Club in Champaign, IL.