ADAM DECONINCK

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Summary

Engineer and scientist with expertise in high-performance computing and scientific 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 for numerical applications. 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 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).
- Development of in-house infrastructure and automation for self-service "cloud" HPC clusters.
- 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
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

Other Experience

- **Warewulf 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**: Developed mathematical morphology processing routines and plugins 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/Warewulf, Cobbler, PBS, Grid Engine, Hadoop) and Windows (HPC Pack).
- Parallel/distributed filesystems including Lustre, PVFS2 and HDFS.
- Local 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