ADAM DECONINCK

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Summary

Engineer and scientist with expertise in high-performance computing and cloud computing. Background in academic and commercial research with a heavy focus on computational analysis. Interested in "Big Data" technologies and the application of cloud computing to HPC for non-traditional users.

Professional Experience

Systems Administrator/Applications Specialist @ R Systems NA, Inc. November 2010–present

- Design, deploy, and support private "cloud" HPC clusters on R Systems hardware for research customers.
- Measure and tune behavior of customer applications for best performance and usability.
- Support and train users with varied levels of past experience with HPC.
- Develop software and pre-built images for automating deployment of custom compute clusters.
- Track and evaluate new software and hardware technologies for existing and potential customers.
- Outreach activites to relevant research communities and open-source projects.
- Active and past projects include:
  - Long-term (1+ years) deployment of 600-1000 core RHEL 5.6 cluster for meteorological modeling application.
  - Long-term (1+ years) deployment of 1000 core Windows 2008 HPC R2 cluster for actuarial application.
  - Deploy short-term test clusters for a high-performance storage vendor benchmarking development hardware.
  - Over a dozen other shorter-term or smaller deployments for various scientific and engineering applications.

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 administered group compute servers.
- 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

- **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 plugins**: Developed mathematical morphology processing routines for the popular image-processing tool, available at http://www.github.com/ajdecon/imagej_morphology.
- **Fencing**: Épée fencer and occasional volunteer instructor at The Point in Champaign, IL. Previously served as President of the Fencing Club at Michigan Technological University.

Skills and Knowledge

- **High Performance Computing:**
  - Experienced sysadmin in Linux and Windows
  - Provisioning: Perceus/Warewulf, xCAT, Cobbler
  - Schedulers: Torque/PBS, Grid Engine, Hadoop
  - Virtualization: KVM, Hyper-V, EC2, OpenQRM
  - Parallel file systems: Lustre, PVFS2, HDFS
  - Networking: Ethernet and Infiniband
  - Experienced with Microsoft HPC Pack
  - Configuration management with Puppet
  - Excellent user support, communications skills
- **Programming Languages:**
  - Scientific programming: Matlab, Java, Python
  - Sysadmin: Python, Perl, shell scripts
  - Classroom or personal experience: Fortran, C, R
- **Scientific Research:**
  - Image processing and mathematical morphology
  - Microscopy: optical, fluorescent, SEM, confocal
  - Microfabrication with silicon and soft materials
  - Microfluidics and nonlinear rheology

Education

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