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Psychology-Computer Science Building, Room 460
Northern Illinois University
DeKalb, IL 60115 USA

Facilities

High Performance Computing Facilities

Northern Illinois University has a high performance computing cluster named Gaea. It is a hybrid CPU/GPU cluster with the following five components:

- Single login computer.
- Two storage servers, each an HP Proliant DL380G7 server.
- A disk storage array with 192 Terabytes of effective storage space after RAID 6 provided by the HP P2000 storage array. The storage array is connected to the storage servers via 6 Gigabit/second SAS connections.
- Full 1:1 non-blocking Infiniband and Ethernet switch interconnects.
- 60 HP SL380s G7 compute nodes where each compute node has:
  - 2 x Intel X5650 2.66GHz 6-core processors (i.e., 12 cores).
  - 72 Gigabytes RAM.
  - 4 x 500 Gigabytes 2.5" SATA disk drives (i.e., 2 TB disk).
  - Integrated QDR Infiniband adapter.
  - 2 x one-Gigabit/second Ethernet adapters (i.e., 2 Ethernet ports).
  - 2 x NVIDIA M2070 FERMI Class GPU, 6 Gigabytes RAM each GPU.

Gaea has been measured to deliver 36.4 TeraFLOPs of computation.

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Phone: 815.753.0378
Office Hours: Monday-Friday, 8:00-Noon & 1:00-4:30pm

Data, Devices, and Interaction Laboratory

Since joining NIU in 2012, Dr. Michael Papka has been developing the Data, Devices, and Interaction Laboratory (DDI Lab) as a new university resource to support a range of computer science research projects, with an emphasis on high-performance and parallel computing.

Dr. Papka is the principal investigator of several collaborative research projects to advance scientific applications, and to investigate new data analysis techniques. The DDI Lab will provide opportunities for NIU students to assist with research related to these and future projects.

Dr. Papka's research interests include the life cycle of sensor-gathered and computer generated data and the use of high-resolution and interactive displays to analyze the data. A key focus of the DDI Lab is the interaction between user and tools, specifically, how computers support and enhance knowledge and discovery.

The DDI Lab is currently focused on the use of advanced displays for visualizing extremely large datasets and on improving how users gain access to their data, both visually and via the network.

The DDI Lab, while still being built out, has the following resources available:

- Display Technology
  - 4K display with touch overlay
  - 3x3 LED passive stereo display with head tracking
  - Oculus Rift virtual reality headset
- Computational Resources
  - Graphics workstation with 4 Nvidia K6000 GPUs
  - 3 Mac Mini Workstations
  - 1 MacPro Workstation

Mobile Device Programming

The Department, with support from the University's Information Technology Services (ITS), maintains a Mobile Device programming lab in the Psychology-Computer Science Building.

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This lab includes 16 workstations for students in the mobile device courses. Each workstation supports programming for Android, iOS (Apple), and WinPhone (Microsoft). The Android app programming environment consists of the Eclipse development environment and the latest version of the Android SDK (Software Development Kit). Support for Apple iOS app development is hosted on a Mac Mini (for each workstation), and WinPhone development tools are accessed via a network connection to an ITS-hosted server with .NET and Visual Studio support for WinPhone. Each of these development environments includes software emulators for testing apps. In addition, a number of actual mobile devices is available for each platform, so students can test their new apps on actual physical devices.

The lab itself is equipped with a “smartboard” which can be used like a traditional whiteboard and can display output from the instructor’s podium computer to enhance and support classroom lectures or discussions.

Student Computing Facilities

Several UNIX servers and an IBM mainframe at Marist College are used for student course work.

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