

# Martin Gehrke

Pittsburgh, PA  
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## Education:

### Bachelor of Science in Computer Science

May 2006

Fu Foundation School for Engineering and Applied Science  
Columbia University

## Computer Knowledge:

*Programming Languages (Used Daily):*

PHP, Perl, Python, Bash, Javascript

*Programming Languages (Have Used):*

C, C++, Java

*Operating Systems:*

Linux (SUSE, Ubuntu), VMWare ESXi, IOS  
Windows XP/Vista/2k3/2k8

*Hardware:*

Dell & Generic Workstations;  
HP DL360/380/580, HP BL460/680,  
Supermicro & Whitebox, Cisco 3750G/E, 4900  
Nvidia Tesla

*Open Source Software:*

Apache, jQuery, Cacti, MySQL, VirtualBox

## Work Experience:

### Systems Administrator

August 2006 – Present

#### Two Sigma Investments, LLC, New York, NY

Two Sigma Investments, LLC is a finance and technology firm that uses process-driven investment trading strategies. They leverage the use of new technologies and a large machine environment to develop and compete in the financial industry.

- ◆ Product Manager for Simulation/Compute Farm
  - Daily maintenance and long term project management for a top 500 Supercomputer level environment with 300+ servers, 1+ petabyte of storage at multiple data centers
  - Responsible for server evaluation, purchasing, installation, monitoring, troubleshooting, repair
  - Designed and upgraded the network from 1GbE using Cisco 3750s to 10GbE using Arista
  - Managed the addition of 128 new servers to address capacity shortages
  - Created metrics and Key Performance Indicators to help with a cost benefit analysis of future projects
  - Collaborated with internal developers to research, evaluate, and purchase company's first GPU computation platform to dramatically decrease simulation runtimes
- ◆ Linux Systems Administration
  - Automated unattended machine builds in Ubuntu using preseed files, apt-mirrors, and post-build customizing scripts to create a single touch machine build process for a Global build infrastructure allowing Administrators to quickly build servers in colocations around the world.
  - Automated Server hardware and health monitoring to identify failed components and streamline RMA process
  - Worked with users to identify hardware requirements, secured competitive pricing from vendors and engineered solutions to meet user needs
  - Designed user interfaces using jQuery, Python, and PHP to visualize server monitoring data

- Authored a tool to centralize maintenance plans and communicate server down time to users using Python and MSSQL
- Created DEB repository for internal packages, automated new package additions, created DEB files from scratch
- Extensive Documentation of all aspects of environment and procedure, enabling all Administrators to more easily familiarize themselves with new features and information
- Troubleshooting of Research and Production equipment
- ◆ Datacenter Management
  - Monitoring of environment and facilities using POE temperature/humidity sensors, cameras, and door sensors
  - Ordered and installed 30 APC 48U Netshelter SX racks with cable management and rack-level managed PDUs at multiple locations
  - Implemented hot aisle / cold aisle layout using datacenter best practices
  - Setup realtime monitoring of datacenter and rack-level PDUs using SNMP
- ◆ Windows Systems Administration
  - Built and configured Windows 2003/2008/MSSQL servers
  - Intermediate knowledge of Active Directory / DNS / DHCP / DFS
  - Rollout of 802.1x IBNS to user environment
  - New user creation and maintenance
  - Created a server in Python to listen for remote commands to create and delete DHCP and DNS records allowing for the automation of server provisioning and decommissioning
  - Created Firefox extension to better integrate the browser into our Enterprise environment
- ◆ Network Administration
  - Intermediate Cisco management, troubleshooting
  - Assigned VLANs, created port-channels, and added switches to an existing Stack
- ◆ Systems Programming
  - Python, Bash, PHP, CGI programming
  - Tools to monitor and manage fast growing and quickly changing environment
- ◆ Regular Duties
  - On-call rotation
  - Helpdesk / phone support

### **Junior Systems Engineer/Administrator**

June 2004 – August 2005

### **Northrop Grumman Information Technology, Washington D.C.**

- ◆ Team member of Group Virtual Reality Center and Software Integration Lab
- ◆ Responsible for 150 Windows, 15 SUN Solaris, and 5 Linux machines
- ◆ Order and assembly of new workstations

### **Personal Interests:**

Home Network: At home I use a mix of Windows XP, Ubuntu, and FreeBSD. I run FreeNAS as a backup and file server that uses a mixture of TFTP, SMB, NFS, and HTTP. I have flashed the firmware of an older WRT54G with DD-WRT and created a secure wireless network using WPA2 encryption. I created a PXE network to build Ubuntu machines.

Firefox: I wrote an extension, Open Source in Tab, that allows the user to view the HTML source in a new tab, instead of opening an entirely new window.

### **Activities and Leadership:**

United States Rowing Assistant Referee 2008-Present

Central Park Track Club Webmaster 2007-Present

Columbia University Varsity Crew Team – Captain 2004-05

Association of Computing Machinery – Organizational Committee Member 2004-05  
International Athlete House - Founding member: Spring 2004  
Columbia University Varsity Crew Team - Team member: 2003, 2004  
Senior Patrol Leader & Assistant Scout Master – Alexandria, VA Boy Scout Troop 131  
Masters Intermediate Crew Coach – Thompson Boat Club, Washington, D.C. 2004

**Honors:**

Eagle Scout, Troop 131, Boy Scouts of America  
Washington Post All-Metropolitan Crew Team 2002  
Presidential Scholar, Gonzaga College High School