Jeffrey **Hafner**

Physicist & Unix Engineer

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I am a geek, a skeptic and I wear bowties for fun. I have been a Unix Engineer for two years, and was described on my 2017 review as highly innovative. Most recently I have been a ROC engineer, operating the robots for Walmart. Experience complimented by Ph.D. in Physics.

Technical Portfolio: C, R, and Python, Scheme, Lua, Bash, Perl, Fortran, C++, LaTeX.

Experience

ROC Engineer   *Pittsburgh, PA*

Tech Mahindra   *May 2019–December 2019*

- Operate the robots in Walmart
- Utilized ROS software in a docker image
- Work for BossaNova robotics through Tech Mahindra

Unix Linux Systems Engineer   *New York, NY*

IPsoft Inc   *Aug 2016–Mar 2018*

- Manage IT infrastructure of high profile clients
- My communication with key clients was described as "commendable"
- Utilized Ansible and IPautomatas, their proprietary solution, to provide unix automation

Volunteer

Physics Graduate Student Association Senator   *Buffalo, NY*

University at Buffalo   *Aug 2008–Dec 2011*

- Spent three years maintaining and starting the graduate student computer lab
- It involved Kerberos, OpenLDAP, OpenAFS, Python, Windows and Linux
- Was also in charge of the department webserver

Education

University at Buffalo   *Buffalo, NY*

Ph.D in Physics   *Aug. 2006 – Feb. 2012*

Andrews University   *Berrien Springs, MI*

B.S./M.S. in Biophysics and Mathematical Studies   *Aug. 2001 – Aug. 2006*

Awards and Certifications

2016   **Red Hat Certified System Administrator**, License 130-172-497   *RHCSA*

2016   **Cisco Certified Entry Networking Technician**, License CSCO12981391   *CCENT*

Projects

PHY506: Computational Physics 2

UNIVERSITY AT BUFFALO

Buffalo, NY

Spring 2008

Implemented a cellular automata traffic modeler in Python to investigate phase transitions in traffic

PHY515: High Performance Computing 1

UNIVERSITY AT BUFFALO

Buffalo, NY

Fall 2008

Parallelized my dissertation utilizing ScaLAPACK.

CSE536: Computational Biology

UNIVERSITY AT BUFFALO

Buffalo, NY

Fall 2011

Implemented a 2D Hydrophobic-Hydrophilic Protein folder utilizing an Ant Colony Optimization Algorithm in Python.

Doctoral Dissertation

UNIVERSITY AT BUFFALO

Buffalo, NY

2008–2011

- titled: *Validation and Refinement of Course Grained Protein Models*
- About a 100 pages of text, Over 5000 lines of C, and over 1000 lines of Python.
- Work was performed on the computing resources of UB Center for Computational Research

physicsAMC

PHYSICS TEACHER

Dobbs Ferry, NY and Baltimore, MD

2014–2016

- A comprehensive physics exam bank that utilizes an lpeg parser for question selection.
- This project enabled me to use an infinite redo policy on all assessments, without punishment, which was an important motivation for this project, and created some of my favorite memories.
- this project utilizes LaTeX, lua, lpeg, and tikz for graphics, and contains more than a 100,000 lines of code.
- sample-exam, `https://github.com/jphafner/physicsAMC`

physicsReport

PHYSICS TEACHER

Dobbs Ferry, NY

2015

An example lesson plan, and lab report template that I used while a physics teacher, `https://github.com/jphafner/physicsReport`

Publications

2009	**Approximate normal mode analysis based on vibrational subsystem analysis with high accuracy and efficiency,** Journal of Chemical Physics	*Hafner J. & Zheng W.*
2010	**Optimal modeling of atomic fluctuations in protein crystal structures for weak crystal contact interactions,** Journal of Chemical Physics	*Hafner J. & Zheng W.*
2011	**All-atom modeling of anisotropic atomic fluctuations in protein crystal structures**, Journal of Chemical Physics	*Hafner J. & Zheng W.*