Jeffrey **Hafner**

Physicist & Engineering Specialist

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I am a geek, a skeptic and I wear bowties for fun. I have been a Unix Engineer for a while now, and was described on my 2017 review as highly innovative. Currently I am an Unix Engineer Engineer for Fedex Supply Chain. Experience complimented by Ph.D. in Physics.

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

Experience

Engineering Specialist
Pittsburgh, PA

Fedex Supply Chain — *April 2020–Current*

- I utilize Terraform and Ansible to deploy and configure systems on Oracle Cloud Infrastructure (OCI).
- I have written custom scripts to perform audits for clients and other stuff relating to OCI.
- I have done a lot of infrastructure as code using Terraform.
- I have brought automation with my Ansible skills.

ROC Engineer
Pittsburgh, PA

Tech Mahindra — *May 2019–December 2019*

- Operate the inventory robots in Walmart
- Utilized ROS software in a Docker image
- Work for BossaNova robotics through Tech Mahindra
- All work was done on a Linux host

Unix Linux Systems Engineer
New York, NY

IPsoft Inc — *Aug 2016–Mar 2018*

- Manage IT infrastructure of high profile clients
- Monitored client environments and developed automation to resolve issue
- Diagnosed issues with Unix/Linux.
- My communication with key clients was described as “commendable”
- Utilized Ansible and IPautomatas, their proprietary solution, to provide unix automation
- Provided automation for clients “that exceeds most of the rest of your teammates”.

Physics Teacher
Dobbs Ferry, NY

Masters School — *2015–2016*

- Teaching 11th grade and AP Physics C: Mechanics
- An example lesson plan and lab report template used
- Utilized a unique assessment system that allowed infinite redos

Physics Teacher
Baltimore, MD

Baltimore City Public Schools — *2014–2015*

- Teaching physics first at Mervo
- Utilized a unique assessment system that allowed infinite redos

Adjunct Physics Professor
Towson, MD

Towson University — *2013-2014*

- Teaching Light and Color, a non-major physics course

Postdoctoral
Baltimore, MD

University of Maryland — *2012*

- Implementation of Particle Mesh Ewald Electrostatics for Continuous Constant pH Molecular Dynamics in CHARMMM.

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 — *Buffalo, NY*

University at Buffalo — *Spring 2008*

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

PHY515: High Performance Computing 1 — *Buffalo, NY*

University at Buffalo — *Fall 2008*

Parallelized my dissertation utilizing ScaLAPACK.

CSE536: Computational Biology — *Buffalo, NY*

University at Buffalo — *Fall 2011*

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

Doctoral Dissertation — *Buffalo, NY*

University at Buffalo — *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 — *Dobbs Ferry, NY and Baltimore, MD*

Physics Teacher — *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 — *Dobbs Ferry, NY*

Physics Teacher — *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.*