

# 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 for Fedex Supply Chain. Experience complimented by Ph.D. in Physics.

**Technical Portfolio:** C, R, and Python, Scheme, Lua, Bash, Perl, Fortran, C++,  $\text{\LaTeX}$ .

## Experience

### Engineering Specialist

FEDEX SUPPLY CHAIN

Pittsburgh, PA

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

TECH MAHINDRA

Pittsburgh, PA

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

IPSOFT INC

New York, NY

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 IPautomas, their proprietary solution, to provide unix automation
- Provided automation for clients “that exceeds most of the rest of your teammates”.

### Physics Teacher

MASTERS SCHOOL

Dobbs Ferry, NY

2015–2016

- Teaching 11<sup>th</sup> 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 CITY PUBLIC SCHOOLS

Baltimore, MD

2014–2015

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

### Adjunct Physics Professor

TOWSON UNIVERSITY

Towson, MD

2013-2014

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

### Postdoctoral

UNIVERSITY OF MARYLAND

Baltimore, MD

2012

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

## Volunteer

### Physics Graduate Student Association Senator

UNIVERSITY AT BUFFALO

Buffalo, NY

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

PH.D IN PHYSICS

Buffalo, NY

Aug. 2006 – Feb. 2012

### Andrews University

B.S./M.S. IN BIOPHYSICS AND MATHEMATICAL STUDIES

Berrien Springs, MI

Aug. 2001 – Aug. 2006

## Awards and Certifications

- 2016 **Red Hat Certified System Administrator**, License 130-172-497  
2016 **Cisco Certified Entry Networking Technician**, License CSC012981391

RHCSA

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  $\text{\LaTeX}$ , 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.*