

# 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++,  $\text{\LaTeX}$ .

## Experience

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### ROC Engineer

TECH MAHINDRA

Pittsburgh, PA

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

IPSOFT INC

New York, NY

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

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### 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

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### 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

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|------|---|-------|
| 2016 | <b>Red Hat Certified System Administrator</b> , License 130-172-497       | RHCSA |
| 2016 | <b>Cisco Certified Entry Networking Technician</b> , License CSC012981391 | CCENT |

## Projects

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### PHY506: Computational Physics 2

UNIVERSITY AT BUFFALO

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

Buffalo, NY

Spring 2008

### PHY515: High Performance Computing 1

UNIVERSITY AT BUFFALO

Parallelized my dissertation utilizing ScaLAPACK.

Buffalo, NY

Fall 2008

### CSE536: Computational Biology

UNIVERSITY AT BUFFALO

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

Buffalo, NY

Fall 2011

### Doctoral Dissertation

UNIVERSITY AT BUFFALO

- 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

Buffalo, NY

2008–2011

### physicsAMC

PHYSICS TEACHER

- 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>

Dobbs Ferry, NY and Baltimore, MD

2014–2016

### physicsReport

PHYSICS TEACHER

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

Dobbs Ferry, NY

2015

## Publications

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