Marina Wahl | Curriculum Vitae

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Education

Hacker School, New York, NY, USA
https://www.hackerschool.com *Fall/2014*

Los Alamos National Laboratory, NM and Stony Brook University, NY, USA
Ph.D., Astrophysics, Theoretical Studies of Atmospheric Conditions of Astrophysical Transients *2014*

Stony Brook University, NY, USA
M.A., Nuclear Physics *2011*

University of Sao Paulo, Brazil
Bc.S., Physics and Mathematics *2009*

Honors

2014-2015: Graduate Fellowship, **Los Alamos National Laboratory**, USA. (Declined)

2013: Honor Scholarship, **XSEDE Summer School on HPC in Sciences**, NYC, USA

2013: Full Scholarship, **221st American Astronomical Society Meeting**, Long Beach, CA, USA

2009-2014: Full Ph.D Tuition, **Stony Brook University**, USA.

2010-2014: Researcher Assistant, **Stony Brook University**, USA.

2009-2010: Teaching Assistant, **Stony Brook University**, USA.

2008: Graduate Internship, **NASA's Goddard Space Flight Center**, Greenbelt, MD, USA

2008: Honor Scholarship, **CERN School of High-Energy Physics**, Colombia

Publications and E-Books

2014: *Machine Learning with Python. Packt Publishing.*Technical reviewer (in process).

2014: *On Classifying Complex Networks by their Topological Properties* (in review).

2014: *Sub-Eddington Model Atmospheres, Spectra, and Color Corrections for X-Ray Bursting* (in review).

2013: e-Book: *Algorithms and Data Structures Python, Over 100 solved problems*, `bit.ly/py_alg_book`

2012: *Jet-Underlying Event Separation Method for Heavy Ion Collisions*, Phys. Rev. C 86, 024908.

2011: e-Book: *Group Theory for Physicists*, `bit.ly/groups_book`

Skills and Interests

I am comfortable working with Python (xp: 4 years) and Linux (xp: 6 years), including network programming and Shell scripting.
I have been studying several penetration testing and vulnerability analysis tools/techniques, in stand-alone and networked applications. I have interest in both web and exploitation tracks. I am a member of a top-ranked CTF team ("Snatch the Root").

Selected Projects

2014: New Maintainer of Python Cryptography Toolkit (PyCrypto): A collection of cryptographic modules implementing various algorithms and protocols. Subpackages contain secret-key (AES, DES, ARC4) and public-key encryption (RSA PKCS#1) algorithms, hashing algorithms (MD5, SHA, HMAC), cryptographic protocols (Chaffing, all-or-nothing transform, key derivation functions), public-key encryption and signature algorithms, and various modules and functions. `https://www.dlitz.net/software/pycrypto/api/2.6`

2014: Classifying Complex Networks: Applying machine learning techniques to characterize complex network's structure. This allows the understanding of any unifying principles underlying their topology. Several supervised and unsupervised methods. Technologies: **Python**, **NetworkX** and **scikit-learn**. `bit.ly/ComplexNetworks`

2014: Modeling X-Ray Bursters: My PhD research. Monte Carlo simulations of bursting Neutron Star and statistical analysis of their spectra. Technologies: **Python**, **NumPy**, **C++**, **Shell scripting**. `bit.ly/XBurstersPhD`

2013: Studies on Computational Photography: Implementation of gradient-domain fusion of pictures, face morphism, and automatic colorization of greyscale faces. Technology: **MATLAB**. `bit.ly/CompPhotoSB`

2013: Hacking the Microsoft Kinect: Hacking the RGB and 3D cameras for computer vision projects. Technologies: **Linux**, **MATLAB**. `http://bit.ly/kinect-1` and `bit.ly/kinect-2`