R. ZACHARY LAMBERTY

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Profile

I am a passionate and resourceful problem solver and data hacker with analytical acumen and experience in high-performance, rapid-response environments. I am looking for the opportunity to apply my analytic, strategic, and programmatic skills to real-world problems by developing fascinating, robust, and creative applications.

My primary skills are:

- Creative, flexible, and rapid problem analysis and response
- An ability to learn anything, proficiently and quickly.
- A knack for to-the-point communication

Primary Professional Experience

Software Developer, **Achievement Asset Management**, Chicago, IL, Sep. 2013 - present

- Gained extensive real-world experience developing in the Python programming language
- Went from having no finance or dev experience to being a trusted source of information on business-critical topics by asking thoughtful questions, diving into our codebase, and researching independently;
- Have been described by managers and coworkers as having "great attention to detail," a "genuine interest", and being "reliable," "an excellent learner," "responsible," a "future leader," and "our favorite dev to work with;"
- Developed flexible, resilient, and reliable software directly responsible for crucial client-facing business operations;
- Assisted in the planning and execution of our central data warehouse by researching possibilities, mocking up best options, developing prototypes and implementation plans, and executing those plans;
- Generated positive work relationships with demanding clients in difficult and contentious environments;
- Replaced an outdated file transfer and clearing process with a flexible ETL module in under two weeks;
- In one year, became the only dev in the organization to understand and develop for all of our systems from installation to standard use cases, and am primarily responsible for three quarters of them

Education

Cornell University, Ithaca, NY
Master of Science, Theoretical Physics (minor emphasis experimental physics) 3.86 GPA Oct. 2012
National Science Foundation Graduate Research Fellow

University of Notre Dame, Notre Dame, IN
Bachelor of Science (magna cum laude), Physics and Mathematics 3.88 GPA Jan. 2008
Minor Emphasis in College of Arts & Letters and Science Honors Program

Other Experience

Research Assistant, Cornell University, Ithaca, NY 14851, June 2009 - August 2013
Teaching Assistant, Cornell University, Ithaca, NY 14851, August 2008 - June 2010
Executive Member, Physics Graduate Society, Ithaca, NY 14851, May 2009 - August 2013

Skills and Strengths

Analysis

- Constructed advanced computer simulations (involving state-of-the-art classical and quantum Monte Carlo techniques) to study physical systems;
- Designed and implemented an ETL library for acquisition, cleaning, and storage of sensitive reconciliation data;
- Independently researched the principles of financial risk analysis and implemented an open source alternative to the currently-used proprietary system;
- Maintained and data-mined large-scale computational physics simulations over the course of four years;
- Performed quantitative and qualitative analysis of large data sets using the scientific Python stack, and developed methods for extracting meaningful correlations and relationships for scientific publication;
- Designed and implemented a strategic long-term plan for answering advanced scientific research questions in the field of highly frustrated magnets;
- Completed several Coursera tracks on data science and analytics

Software Development

- Continually sought to expand my proficiency in the Python programming language;
- Independently learned the R programming language and related content distribution packages (e.g. RShiny), advocated for and successfully applied them in the business setting

- Focused on increasing knowledge of DevOps monitoring practices and collaborative tech team workflow processes by consulting with teammates and mentors on best practices;
- Experienced myriad of development environments (e.g., team-based vs independent; multiple operating systems, physical/virtual architetures, and languages; open source vs. proprietary code; vendor vs. in-house software; long-term vs. high-urgency devlopment);
- Am extremely flexibile with languages, best practices, and institutional preferences -- "use the best tool, not 'your' tool"

Programming Experience

- ***programming and scripting languages***: excellence in python and bash; proficiency in R, C, C++, (Postgre)SQL, and xpath; and experience with C#, Java,Ruby/Rails, FORTRAN, Matlab, Octave, Mathematica, (La)Tex, markdown, sweave, PowerShell, Julia, JavaScript, CSS, html, OpenGL. Please see http://rzachlamberty.github.io/resume/ for code examples;
- ***special focus areas and code libraries***: scientific python stack (Numpy, SciPy, Pandas, scikit-learn, matplotlib, plotly, ipython/jupyter), python web development (flask and tornado), C++ Boost libraries;
- ***development and system administration tools***: emacs (w ESS), vim (if I must), Eclipse, putty, git, github, Atlassian tools (JIRA, Confluence), SOS Open Source Job Scheduler, Zenoss, Graylog, WireShark;
- ***data transport, serialization and configuration***: XML, SOAP, JSON, YAML, Google ProtocolBuffers, KML, GeoJSON, FIX, html and RESTful APIs;
- ***nitty gritties***: ssh, (s)ftp, snmp, rsync, packet sniffing, GNU tools, linux (mostly debian) utitlities;

Problem Solving

- Developed a novel family of models to analyze unsolved and intractable physical phenomena;
- Reduced several hundred lines of custom in-house Python code with one bash script and the right ftp client (lftp);
- Learned several programming languages and tools (Python, C/C++, FORTRAN, Git, Mathematica, Google's Protocol Buffers, OpenGL) independently to solve problems and advance analysis capabilities;
- Posed an advanced scientific question, produced results, and published those results;
- Learned and implemented computational methods which allowed for effective calculations of research problems too computationally difficult for traditional methods

Communication

- Cultivated positive, friendly, and professional relationships with everyone with whom I've worked;
- Effectively communicated ideas concisely and completely in high-stress environments;
- Published one scientific article in Physical Review Letters, and submitted a second for review;
- Presented research results at the 2012 American Physical Society March Meeting and the 2010 and 2012 Highly Frustrated Magnetism conferences both to large audiences and in one-on-one settings;
- Advocated for STEM research and education funding to congressional delegations on behalf of the American Physical Society at the 20011 and 2012 Science-Engineering-Technology Congressional Visit Days;
- Designed, managed, and taught sections for four Cornell University science courses, three of which were aimed at non-scientist audiences

Leadership and Collaboration

- Worked in highly-collaborative in teams of five to ten tech professionals at Peak6 and Achievement Asset Management;
- Successfuly lead tech team projects (e.g. a long-term reconciliation revamping) by clearly communicating expectations and constantly following up about tech team progress and business satisfaction;
- Served as Vice President, President, and Chief Advisor of the Physics Graduate Society and acted as liaison to the department administration to determine issues such as organizational funding and policies towards students;
- Mediated interpersonal conflict as assistant rector at Notre Dame by facilitating conversations and diffusing emotional situations;
- Completed the one-week "Leadership Assessment for Managers" course at Cornell University;

Other Activities

Ithaca Big Brothers Big Sisters volunteer • American Physical Society member • Cornell Intramural Flag Football Champion