

# CHRISTOPHER C. STOAER

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## EDUCATION

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**Columbia University**, Graduate School of Arts and Sciences  
Ph.D. Candidate in Applied Physics  
M.S. in Applied Physics

*New York, NY, 2010-  
Expected Graduation: May 2015  
GPA: 3.8/4.0*

**California Polytechnic State University**  
B.S. in Chemistry and Biochemistry  
Minor in Physics

*San Luis Obispo, CA, 2003-2008  
Graduated Magna cum Laude  
GPA: 3.8/4.0*

*Data Science Coursework:*

Machine Learning	Advanced Programming	Introduction to Data Science
Modeling Social Data	Algorithms	

## TECHNICAL SKILLS

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<b>Computer Languages</b>	Python, C
<b>Web Development</b>	D3.js, HTML, CSS
<b>Other Computer Skills</b>	Bash, Git, GitHub, LaTeX, MATLAB, Solidworks
<b>Basic Knowledge</b>	C++, MySQL, JavaScript, PHP, MapReduce

## DATA SCIENCE PROJECT EXPERIENCE

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For additional project details, see [www.chrisstofer.com/projects.html](http://www.chrisstofer.com/projects.html)

**Urban Health Repository Systems**  
[www.columbia.edu/~ccs2142/uhrs/visuals.html](http://www.columbia.edu/~ccs2142/uhrs/visuals.html)

Columbia University's SIPA Dean's Challenge  
*Semi-Finalists*

- Effectively collaborated in a team of 6 members to build a data-driven startup with a mission of educating Asthma sufferers about harmful environmental exposures, such as building materials and air quality.
- Served as the technology leader; created interactive web data visualizations, using D3.js and Python, to increase public awareness and understanding of potential factors in Asthma exacerbations.

**Bitquant**  
[www.github.com/cstofer/bitquant](http://www.github.com/cstofer/bitquant)

Hackbit: Bitcoin Student Hackathon  
*Third place in competition*

- Developed an algorithm and script to automatically buy and sell Bitcoin on the Bitstamp market based on the real-time order book, using the Bitstamp API and Python.

## RESEARCH AND PROFESSIONAL EXPERIENCE

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**Columbia University Plasma Lab**  
*Graduate Research Student*

August, 2010 - Present  
*New York, NY*

- Formulate and conduct experiments related to the study of plasma physics and nuclear fusion.
- Improve and develop data analysis algorithms in Python routines used by the entire lab for understanding plasma conditions from a spectrum of measurements. Techniques include Fourier analysis, signal correlations and convolutions, and high/low pass filtering.
- Managed a data acquisition and database system called MDSplus.
- Designed and built a plasma diagnostic system called Thomson scattering, requiring hardware/software interfaces, signal fitting, maximum likelihood analysis, and database management.

**Lawrence Livermore National Laboratory***Research Intern*

Summer, 2007 &amp; Summer, 2010

*Livermore, CA*

- Conducted a novel, high-energy Thomson scattering experiment and published the results with a small team.
- Developed data analysis software for X-ray Thomson scattering experiments with an aim to standardize, improve, and speed-up data analysis processing. Data analysis included curve fitting, baseline subtraction, and Gaussian peak fitting.
- Designed a high-energy electron spectrometer by developing a 3-D relativistic electron propagation computer simulation using the Runge-Kutta method for determining electron trajectories through a magnetic field.

**KLA-Tencor***Applications Engineer*

June, 2008 - February, 2010

*Milpitas, CA*

- Generated analytical reports presenting the defect inspection results of samples from potential customers for the evaluation of our products.
- Consulted for more than ten companies worldwide teaching clients how to operate semiconductor defect inspection systems and develop algorithms to detect and classify their defects of interest.
- Managed customer requests through direct interaction and facilitated product development by working with engineering and marketing teams to fulfill these needs.

**LEADERSHIP AND EXTRACURRICULAR EXPERIENCE**

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**Columbia Data Science Society, 2014 - Present***Website Development Lead: [www.cdss.club](http://www.cdss.club)**Event coordinator for interfacing the student organization with industry, e.g. career panels and networking.***Graduate Student Liaison, 2010 - Present***Organize social events in my graduate school department to promote faculty and student interactions.***New York Academy of Science, 2011 - 2012***STEM Mentor - coached after-school activities in robotics to a group of 20 middle school students.***Alpha Chi Sigma (Professional Chemistry Fraternity), 2005 - 2008***Vice-President, 2006-2007, President, 2007-2008**Increased active enrollment from 30 to 70 members through recruitment and promoting member activity with interactive events, such as community science fairs and outreach.***Player on Columbia Men's Hockey Team****Second degree black belt in Tae Kwon Do****HONORS AND AWARDS**

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Cal Poly Dean's list and President's list

Physical chemistry student of the year, 2007

Analytical chemistry student of the year, 2008

Golden Key Honour Society member

National Society of Collegiate Scholars (NSCS) member