

Sven Kreiss

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An up-to-date version of this CV is available online at <http://www.svenkreiss.com/files/cv.html>.

PROFESSIONAL POSITIONS	<p>Wildcard, New York <i>Lead Data Scientist</i></p> <p>I organize the <i>Data Breakfast</i>, a monthly meeting of Data Scientists in New York City.</p> <p>New York University, New York <i>Teaching Assistant, Physics Department</i></p> <p>University of Edinburgh, UK <i>Teaching Assistant, School of Physics</i></p> <p>ElectronX, Germany <i>Founder, Design and Manufacturing of TV Equipment</i></p> <p>Received high growth support from the Scottish Government.</p>	<p>Sept 2014 — present</p> <p>Fall 2009 — Spring 2011</p> <p>Spring 2007</p> <p>July 2007 — Aug 2009</p>
EDUCATION	<p>New York University, New York <i>Doctor of Philosophy</i></p> <p>Thesis title: Higgs Boson Discovery and First Property Measurements using the ATLAS Detector Advisor: Kyle Cranmer Committee: Andy Haas, David Hogg, Allen Mincer, Neal Weiner MacCracken Fellowship Program</p> <p>University of Edinburgh, UK <i>Master of Physics with Honors Mathematical Physics</i></p> <p>Thesis title: “New Physics at the LHC: Distinguishability of Supersymmetry and Little Higgs models” Advisors: Tilman Plehn and Thomas Grégoire</p>	<p>Sept 2009 — Mai 2014</p> <p>Sept 2005 — Sept 2009</p>
AWARDS	<p>NSF LHC Student Support Award</p> <p><i>Support for a one-year-stay at CERN in Geneva, Switzerland</i></p>	<p>Feb 2011</p>
TEACHING EXPERIENCE	<p>New York University, New York</p> <p>Lecture series for physics majors about the Higgs discovery Lab Instructor, General Physics II Teaching Assistant, Thermodynamics and Statistical Physics Lab Instructor, General Physics I</p> <p>University of Edinburgh, UK Teaching Assistant, Foundations of Mathematical Physics</p>	<p>Feb 2014 Fall 2011 Spring 2010, 2011 Fall 2009</p> <p>Spring 2007</p>

SELECTED
PUBLICATIONS

As a member of the ATLAS collaboration, I am a co-author of over 230 published papers which are listed on [my author page on inspirehep.net](#). Below is a list of publications where I made a significant contribution to the paper itself.

- K. Cranmer, S. Kreiss, D. Lopez-Val, T. Plehn, Jan 2014, **Decoupling Theoretical Uncertainties from Measurements of the Higgs Boson**, *Phys Rev D* 91, [arXiv:1401.0080 \[hep-ph\]](#), [code on Github at svenkreiss/decouple](#), supplemental material at <http://dx.doi.org/10.6084/m9.figshare.888607>.
- ATLAS Collaboration, Sept 2013, *Likelihoods for the $H \rightarrow \gamma\gamma$, $H \rightarrow ZZ^* \rightarrow 4l$ and $H \rightarrow WW^* \rightarrow 4l$ channel in the $(\mu_{ggF+ttH} * B/B_{SM}, \mu_{VBF+VH} * B/B_{SM})$ plane for a Higgs boson mass $m_H = 125.5$ GeV*, Datasets on HepData: <https://inspirehep.net/record/1241574/data>.
- ATLAS collaboration, July 2013, *Measurements of Higgs boson production and couplings in diboson final states with the ATLAS detector at the LHC*, **Editor**, *Phys.Lett. B* 726 (2013) 88-119.
- ATLAS collaboration, July 2013, *Evidence for the spin-0 nature of the Higgs boson using ATLAS data*, *Phys.Lett. B* 726 (2013) 120-144.
- ATLAS collaboration, March 2013, *Combined coupling measurements of the Higgs-like boson with the ATLAS detector using up to 25 fb^{-1} of proton-proton collision data*, **Editor**, ATLAS-COM-CONF-2013-035.
- ATLAS collaboration, July 2012, **Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC**, **Responsible for Bayesian cross checks**, *Phys.Lett. B* 716 (2012) 1-29.
- ATLAS collaboration, July 2012, *Combined search for the Standard Model Higgs boson in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector*, *Phys.Rev. D* 86 (2012) 032003.
- ATLAS collaboration, Feb 2012, *Combined search for the Standard Model Higgs boson using up to 4.9 fb^{-1} of pp collision data at $\sqrt{s} = 7$ TeV with the ATLAS detector at the LHC*, *Phys.Lett. B* 710 (2012) 49-66.
- ATLAS collaboration, December 2010, *Measurement of the top quark pair production cross-section with ATLAS in pp collisions at $\sqrt{s} = 7$ TeV*, *Eur.Phys.J.C* 71:1577, 2011.
- L. Moneta, K. Belasco, K.S. Cranmer, S. Kreiss, A. Lazzaro, et al, Oct 2012, **The RooStats Project**, *PoS (ACAT2010)* 057.
- B.C. Allanach et al, Jan 2008, *SUSY Les Houches Accord 2*, *CPC* 180 (2009) 1.

SOFTWARE
AND
DATASETS

I am an active member of the NYC Tech community and contribute to open source software.

- S. Kreiss, May 2015, *pysparkling: A native Python implementation of Spark's RDD interface*, Github: <https://github.com/svenkreiss/pysparkling>.
- S. Kreiss, Jun 2014, *Databench: Data analysis tool using Flask, WebSockets and d3.js*, Github: <https://github.com/svenkreiss/databench>.
- K. Cranmer, S. Kreiss, D. Lopez-Val, T. Plehn, Jan 2014, *Code to reproduce results for "Decoupling theoretical uncertainties from measurements of the Higgs boson"*, *Phys Rev D* 91, [arXiv:1401.0080 \[hep-ph\]](#), Github: <https://github.com/svenkreiss/decouple>.
- K. Cranmer, S. Kreiss, D. Lopez-Val, T. Plehn, Dec 2013, *Supplementary Material for "Decoupling theoretical uncertainties from measurements of the Higgs boson"*, *Phys Rev D* 91, [arXiv:1401.0080 \[hep-ph\]](#), Figshare: <http://dx.doi.org/10.6084/m9.figshare.888607>.
- S. Kreiss, Oct 2013, *QuizSocket: an online, real-time student response system written in Node.js using WebSockets, d3.js and Handlebars*, <http://www.quizsocket.com>.
- ATLAS Collaboration, Sept 2013, *Likelihoods for the $H \rightarrow \gamma\gamma$, $H \rightarrow ZZ^* \rightarrow 4l$ and $H \rightarrow WW^* \rightarrow 4l$ channel in the $(\mu_{ggF+ttH} * B/B_{SM}, \mu_{VBF+VH} * B/B_{SM})$ plane for a Higgs boson mass $m_H = 125.5$ GeV*, *HepData* [[1](#), [2](#), [3](#)].

INVITED TALKS	Betaworks, New York, NY	May 2015
	Talk on <i>Data and the Higgs Boson Discovery</i> .	
	University of Cambridge, UK	Jan 2014
	Seminar on <i>Factorizing Theoretical Uncertainties from LHC Higgs Coupling Measurements</i> .	
	Statistical and Applied Mathematical Sciences Institute (SAMSI), Durham, NC	July 2013
	Talk on <i>Modeling and Statistical Analysis for Higgs Physics at the Large Hadron Collider</i> at the workshop on <i>Knowledge Extraction via Comparison of Complex Computational Models to Massive Data Sets</i> .	
MEDIA / PRESS	CERN, Switzerland	Jan 2013
	Talk on the <i>$H \rightarrow ZZ^* \rightarrow 4l$ Likelihood in ATLAS</i> at the workshop on <i>Likelihoods for the LHC Searches</i> .	
	LHC Days 2012, Split, Croatia	Oct 2012
	Talk on <i>Standard Model Higgs Combination and Properties</i> .	
	Computing in High Energy and Nuclear Physics (CHEP), New York, NY	May 2012
	Talk on <i>RooStats: Statistical Tools for the LHC</i> .	
	The New Yorker	Oct 2013
	<i>A Nobel Prize Party: Cheese, Bubbles, and a Boson</i> by Betsy Morais	
	Momentum Campaign, New York University	Oct 2013
	A Scholarship Campaign for NYU.	
	The New York Times	March 2013
	<i>Chasing the Higgs</i> by Dennis Overbye. "On the night of June 24, the graduate students and postdocs in Atlas were tiptoeing toward the 5-sigma finish line. Among them was Sven Kreiss, a New York University graduate student who got a preliminary glimpse of the answer alone in his office late that night when, as part of a crosscheck, he combined the data from two signatures of the Higgs decay and found the result breached 5-sigma. The next day he sent a plot to his adviser Kyle Cranmer, whose birthday it was, saying he had a present for him."	
	Science	Dec 2012
	<i>A Particle Consistent with the Higgs Boson Observed with the ATLAS Detector at the Large Hadron Collider</i> by The ATLAS Collaboration.	
	I contributed the analysis of signal strength and mass shown in Fig. 12.	

I speak English and German and have a basic understanding of French. My preferred programming languages are *Python*, *C++* and *JavaScript* and I am also comfortable with *Java* and *Lua/Torch7*. Some of my software projects are at <https://github.com/svenkreiss>.