

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

Wildcard, New York
Lead Data Scientist

Sept 2014 — present

I organize the *Data Breakfast*, a monthly meeting of Data Scientists in New York City.

New York University, New York
Teaching Assistant, Physics Department

Fall 2009 — Spring 2011

University of Edinburgh, UK
Teaching Assistant, School of Physics

Spring 2007

ElectronX, Germany
Founder, Design and Manufacturing of TV Equipment

July 2007 — Aug 2009

Received high growth support from the Scottish Government.

EDUCATION

New York University, New York
Doctor of Philosophy

Sept 2009 — Mai 2014

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

University of Edinburgh, UK
Master of Physics with Honors Mathematical Physics

Sept 2005 — Sept 2009

Thesis title: "New Physics at the LHC: Distinguishability of Supersymmetry and Little Higgs models"

Advisors: Tilman Plehn and Thomas Grégoire

AWARDS

NSF LHC Student Support Award
Support for a one-year-stay at CERN in Geneva, Switzerland

Feb 2011

TEACHING EXPERIENCE

New York University, New York

Lecture series for physics majors about the Higgs discovery

Feb 2014

Lab Instructor, General Physics II

Fall 2011

Teaching Assistant, Thermodynamics and Statistical Physics

Spring 2010, 2011

Lab Instructor, General Physics I

Fall 2009

University of Edinburgh, UK

Teaching Assistant, Foundations of Mathematical Physics

Spring 2007

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](#)].

TALKS	MLconf, Atlanta	Sept 2015
	Conference talk on <i>Deep ML Architecture at Wildcard</i> .	
	Betaworks, New York	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> .	
	CERN, Switzerland	Jan 2013
	Talk on the $H \rightarrow ZZ^* \rightarrow 4l$ Likelihood in ATLAS 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> .	
MEDIA / PRESS	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>.