

# Sven Kreiss

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PROFESSIONAL POSITIONS	<b>Sidewalk Labs</b> , New York <i>Data Scientist</i>	April 2016 — present
	<b>Wildcard</b> , New York <i>Lead Data Scientist</i>	Sept 2014 — March 2016
	<b>ElectronX</b> , Germany <i>Founder, Design and Manufacturing of TV Production Equipment</i>	July 2007 — Aug 2009
EDUCATION	<b>New York University</b> , New York <i>Doctor of Philosophy</i>	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 Award: NSF LHC Student Support Award for a one-year-stay at CERN in Geneva, Switzerland Teaching: Lecture series for physics majors about the Higgs discovery (Feb 2014), Lab Instructor for General Physics II (Fall 2011), Teaching Assistant for Thermodynamics and Statistical Physics (Spring 2010, 2011), Lab Instructor for General Physics I (Fall 2009)	
	<b>University of Edinburgh</b> , UK <i>Master of Physics with Honors Mathematical Physics</i>	Sept 2005 — Sept 2009
	Thesis title: “New Physics at the LHC: Distinguishability of Supersymmetry and Little Higgs models” Advisors: Tilman Plehn and Thomas Grégoire Teaching: Teaching Assistant for Foundations of Mathematical Physics (Spring 2007)	
SFTWARE AND DATASETS	<i>I am an active member of the NYC Tech community, organize the monthly Data Breakfast for Data Scientists in NYC and contribute to open source software.</i> S. Kreiss, May 2015, <i>pysparkling: A native Python implementation of Spark's RDD interface</i> , Github: <a href="https://github.com/svenkreiss/pysparkling">https://github.com/svenkreiss/pysparkling</a> . S. Kreiss, Jun 2014, <i>Databench: Data analysis tool using Flask, WebSockets and d3.js</i> , Github: <a href="https://github.com/svenkreiss/databench">https://github.com/svenkreiss/databench</a> . K. Cranmer, S. Kreiss, D. Lopez-Val, T. Plehn, Jan 2014, <i>Code to reproduce results for "Decoupling theoretical uncertainties from measurements of the Higgs boson", Phys Rev D91, arXiv:1401.0080 [hep-ph]</i> , Github: <a href="https://github.com/svenkreiss/decouple">https://github.com/svenkreiss/decouple</a> . K. Cranmer, S. Kreiss, D. Lopez-Val, T. Plehn, Dec 2013, <i>Supplementary Material for "Decoupling theoretical uncertainties from measurements of the Higgs boson", Phys Rev D91, arXiv:1401.0080 [hep-ph]</i> , Figshare: <a href="http://dx.doi.org/10.6084/m9.figshare.888607">http://dx.doi.org/10.6084/m9.figshare.888607</a> . S. Kreiss, Oct 2013, <i>QuizSocket: an online, real-time student response system written in Node.js using WebSockets, d3.js and Handlebars</i> , <a href="http://www.quizsocket.com">http://www.quizsocket.com</a> . ATLAS Collaboration, Sept 2013, <i>Likelihoods for the <math>H \rightarrow \gamma\gamma</math>, <math>H \rightarrow ZZ^* \rightarrow 4l</math> and <math>H \rightarrow WW^* \rightarrow 4l</math> channel in the <math>(\mu_{ggF+ttH} * B/B_{SM}, \mu_{VBF+VH} * B/B_{SM})</math> plane for a Higgs boson mass <math>m_H = 125.5</math> GeV, HepData [1, 2, 3].</i>	

Conference talk on *Deep ML Architecture at Wildcard*.

Talk on *Data and the Higgs Boson Discovery*.

Seminar on *Factorizing Theoretical Uncertainties from LHC Higgs Coupling Measurements*.

Talk on *Modeling and Statistical Analysis for Higgs Physics at the Large Hadron Collider* at the workshop on *Knowledge Extraction via Comparison of Complex Computational Models to Massive Data Sets*.

Talk on the  $H \rightarrow ZZ^* \rightarrow 4l$  Likelihood in ATLAS at the workshop on *Likelihoods for the LHC Searches*.

Talk on *Standard Model Higgs Combination and Properties*.

Talk on *RooStats: Statistical Tools for the LHC*.

## 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 D91, arXiv:1401.0080 [hep-ph], code on Github at [svenskeiss/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*, **ATLAS writer**, Phys.Lett. B726 (2013) 88-119.

ATLAS collaboration, July 2013, *Evidence for the spin-0 nature of the Higgs boson using ATLAS data*, Phys.Lett. B726 (2013) 120-144.

ATLAS collaboration, March 2013, *Combined coupling measurements of the Higgs-like boson with the ATLAS detector using up to  $25 \text{ fb}^{-1}$  of proton-proton collision data*, **ATLAS writer**, 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. B716 (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. D86 (2012) 032003.

ATLAS collaboration, Feb 2012, *Combined search for the Standard Model Higgs boson using up to  $4.9 \text{ fb}^{-1}$  of pp collision data at  $\sqrt{s} = 7$  TeV with the ATLAS detector at the LHC*, Phys.Lett. B710 (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.C71:1577 (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.

*A Nobel Prize Party: Cheese, Bubbles, and a Boson* by Betsy Morais

Oct 2013

**Momentum Campaign, New York University**

Oct 2013

A one billion dollar fund-raising campaign for scholarships at NYU where I am featured as one of three students.

**The New York Times**

March 2013

*Chasing the Higgs* 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

*A Particle Consistent with the Higgs Boson Observed with the ATLAS Detector at the Large Hadron Collider* 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>.