

Sven Kreiss

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SUMMARY

- Data Scientist with a focus on Machine Learning and Computer Vision
- Organizer of the *NYC Data Breakfast*
- Creator of *pysparkling* and *Databench*, see GitHub: <https://github.com/svenkreiss>
- Preferred programming languages: Python, C++ and JavaScript
- Languages: English (fluent), German (native), French (basic)

EXPERIENCE

Sidewalk Labs, New York April 2016 — present
Data Scientist

Wildcard, New York Sept 2014 — March 2016
Lead Data Scientist

ElectronX, Germany July 2007 — Aug 2009
Founder, Design and Manufacturing of TV Production Equipment

EDUCATION

New York University, New York Sept 2009 — Mai 2014
Doctor of Philosophy

Thesis title: Higgs Boson Discovery and First Property Measurements using the ATLAS Detector

Advisor: Kyle Cranmer

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)

University of Edinburgh, UK Sept 2005 — Sept 2009
Master of Physics with Honors Mathematical Physics

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)

SOFTWARE

Data

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: An interactive realtime data analysis tool*, Github: <https://github.com/svenkreiss/databench>.

Physics

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>.

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 $m_H = 125.5 \text{ GeV}$* , *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> .	

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 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*, **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 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 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.

MEDIA	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 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
	<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.	