Sven Kreiss, PhD

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Machine learning researcher with a focus on computer vision and social robots.
Creator and lead author of the multi-person pose estimator PifPaf.
Statistical modeling expert; was on the core team that discovered the Higgs Boson at CERN.
Founder of the New York City Data Breakfast where key data scientist from various companies exchanged ideas.
Preferred programming environments: PyTorch, Python, C++, TypeScript/JavaScript, Spark, React
Languages: English (fluent), German (native), French (basic)
Grew up in Germany. Studied and lived in the UK, Switzerland and the US.

Experience

EPFL, Visual Intelligence for Transportation, Lausanne — started in April 2018
Postdoc, Computer Vision research for social robots and self-driving cars.
Teaching: Co-teaching "Data and AI for Transportation", Civil-459.
Projects: Multi-person pose estimator PifPaf (*CVPR2019*). Crowd-Robot Interaction with deep reinforcement learning (*ICRA2019*). Automatic differentiation in Social Force models (*STRC2019*, *hEART2019*). Monocular depth estimation of pedestrians (*under review*). Visual similarity for retrieval tasks (*under review*).

Sidewalk Labs, an Alphabet company, New York City — April 2016 – March 2018
Senior Data Scientist April 2017 – March 2018, Data Scientist April 2016 – April 2017
Machine Learning and Computer Vision expert.
Predictive modeling for our spinout company *Coord* that focuses on transportation coordination.
Created geospatial tools and analyses for the urban policy team.
Published a technical article on Hilbert curves and better digital map tools for cities.

Wildcard, New York City — Sept 2014 – March 2016
Lead Data Scientist
Developed a machine learning tool for text and media extraction from HTML documents.
Created a collaborative filtering system on Spark with a particular focus on the cold start problem.

Education

New York University, New York City — Sept 2009 – May 2014
Doctor of Philosophy, Advisor: Prof. Kyle Cranmer
Thesis: Higgs Boson Discovery and First Property Measurements using the ATLAS Detector
Award: "NSF LHC Student Support Award" for a year long stay at CERN in Geneva, Switzerland.
Teaching: Lectures on Higgs discovery. Assistant: Thermodynamics, Premed Labs

University of Edinburgh, UK — Sept 2005 – Sept 2009
Master of Physics with Honors in Mathematical Physics, Bachelor of Science
Advisors: Prof. Tilman Plehn and Prof. Thomas Gregoire
Thesis: New Physics at the LHC: Distinguishability of Supersymmetry and Little Higgs models
Teaching assistant: Mathematical Methods

Software

OpenPifPaf, a state-of-the-art bottom-up multi-person pose estimator in PyTorch. — March 2019
Github: https://github.com/vita-epfl/openpifpaf

s2sphere, a Python implementation of the S2 geometry library. — April 2016
Github: https://github.com/sidewalklabs/s2sphere

pysparkling, a native Python implementation of Spark's RDD interface. — May 2015
Github: https://github.com/svenkreiss/pysparkling

Databench, an interactive realtime data analysis tool. — June 2014
Github: https://github.com/svenkreiss/databench