

# Josua Krause

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<https://josuakrause.github.io/info/>

## Personal Information

date of birth: January 18th, 1988

place of birth: Isny im Allgäu

nationality: Germany

## Education

### University, NYU Tandon School of Engineering

New York, USA – 2013 - (planned) 2018

PhD in Computer Science

thesis: “Using Visual Analytics to Explain Black-box Machine Learning”

supervised by: Prof. Dr. Enrico Bertini

### University, University of Konstanz

Konstanz, Germany – 2011 - 2014

Master of Science in Computer Science

thesis: “Graph Comics: Interactive Staging for Exploring Dynamic Graphs”

supervised by: Prof. Dr. Oliver Deussen, Prof. Dr. Enrico Bertini

### University, University of Konstanz

Konstanz, Germany – 2008 - 2011

Bachelor of Science in Information Engineering

thesis: “Annotation of Changes in Evolving Graphs”

supervised by: Prof. Dr. Oliver Deussen, Prof. Dr. Ulrik Brandes

## **Employments**

### **Pacific Northwest National Laboratory**

New York, USA – 2016 and 2017  
summer internships

### **IBM T. J. Watson Research Center**

New York, USA – 2014 and 2015  
summer internships

### **NYU Tandon School of Engineering**

New York, USA – 2013 - (planned) 2018  
research assistant

teaching assistant in courses:

- Foundations of Data Science 2017
- Information Visualization 2015 - 2016

### **University of Konstanz**

Konstanz, Germany – 2009 - 2013  
research assistant

### **University of Konstanz**

Konstanz, Germany – 2011 - 2012  
teaching assistant in courses:

- Concepts of Computer Science (Bachelor)
- Concepts of Programming (Bachelor)

## Research

### 2017

**Josua Krause**, Aritra Dasgupta, Jordan Swartz, Yindalon Aphinyanaphongs, Enrico Bertini: **“A Workflow for Visual Diagnostics of Binary Classifiers using Instance-Level Explanations”**,

*IEEE Transactions on Visualization and Computer Graphics (TVCG – VAST)* 2017

Paolo Tamagnini, **Josua Krause**, Aritra Dasgupta, Enrico Bertini: **“Interpreting Black-Box Classifiers Using Instance-Level Visual Explanations”**,

*Workshop on Human-In-the-Loop Data Analytics (HILDA)* 2017

### 2016

**Josua Krause**, Aritra Dasgupta, Enrico Bertini: **“Explanatory Visual Analytics for Enhancing Human Interpretability of Machine Learning Models”**,

*Visualization in Data Science (VDS at IEEE VIS)* 2016

**Josua Krause**, Adam Perer, Kenney Ng: **“Interacting with Predictions: Visual Inspection of Black-box Machine Learning Models”**,

*Interactive Data Exploration and Analytics (IDEA)* 2016

**Josua Krause**, Adam Perer, Enrico Bertini: **“Using Visual Analytics to Interpret Predictive Machine Learning Models”**,

*ICML Workshop on Human Interpretability in Machine Learning (WHI)* 2016

**Josua Krause**, Aritra Dasgupta, Jean-Daniel Fekete, Enrico Bertini: **“SeekAView: An Intelligent Dimensionality Reduction Strategy for Navigating HD Data Spaces”**,

*IEEE Symposium on Large Data Analysis and Visualization (LDAV)* 2016

Anshul Vikram Pandey, **Josua Krause**, Cristian Felix, Jeremy Boy, and Enrico Bertini: **“Towards Understanding Human Similarity Perception in the Analysis of Large Sets of Scatter Plots”** (Honorable Mention),

*ACM Conference on Human Factors in Computing Systems (CHI)* 2016

**Josua Krause**, Adam Perer, and Kenney Ng: **“Interacting with Predictions: Visual Inspection of Black-box Machine Learning Models”**,

*ACM Conference on Human Factors in Computing Systems (CHI)* 2016

## 2015

**Josua Krause, Adam Perer, and Harry Stavropoulos: “Supporting Iterative Cohort Construction with Visual Temporal Queries”,**

*IEEE Transactions on Visualization and Computer Graphics (TVCG - VAST)* 2015

**Josua Krause, Narges Razavian, Enrico Bertini, and David Sontag: “Visual Exploration of Temporal Data in Electronic Medical Records”,**

*Poster Session I of the AMIA Annual Symposium; Poster* 2015

**Josua Krause and Adam Perer: “Data-Driven Cohort Construction with Interactive Visual Queries”,**

*2015 Workshop on Visual Analytics in Health Care; Demo* 2015

**Josua Krause, Narges Razavian, Enrico Bertini, and David Sontag: “Visual Inspection of Longitudinal Electronic Medical Records”,**

*2015 Workshop on Visual Analytics in Health Care; Demo* 2015

## 2014

**Josua Krause, Adam Perer, and Enrico Bertini: “INFUSE: Interactive Feature Selection for Predictive Modeling of High Dimensional Data”,**

*IEEE Transactions on Visualization and Computer Graphics (TVCG – VAST)* 2014

## 2012

**Josua Krause, Marc Spicker, Leonard Wörteler, Matthias Schäfer, Leishi Zhang, and Hendrik Strobelt: “Interactive Visualization for Real-time Public Transport Journey Planning”,**

*Proceedings of SIGRAD* 2012

## Research interests

Visual Analytics, Machine Learning, Information Visualization, Predictive Modeling, Human-Computer Interaction

## Committee Memberships

*Workshop on Visual Analytics in Healthcare (VAHC)* 2017