

Daniel Kirsch

Mathematician. Data Products.

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[@kirel](#)

I am excited about **data products** – from the **ML** through the **data infrastructure** up to the **UX**. I've worn many hats like data engineer, **data scientist**, data **product manager**, product analyst (even full-stack web developer). I have built and **led teams** building data products. I speak many programming languages – preferably functional ones. Founder of a data for good non-profit. Creator of **detexify**. Math diploma from University of Münster.

EDUCATION

10/2003 – 11/2010

University of Münster

Diploma in Mathematics / Computer Science Ø 1.5

Thesis (1.3): »**Detexify: Recognition of hand-drawn LaTeX symbols**« implemented as a **RESTful** webservice written in **Haskell** and **Ruby** using **machine learning** techniques. Samples are stored in **CouchDB**. See <http://detexify.kirelabs.org>.

1993 – 2002

Gymnasium Laurentianum Warendorf

Abitur Ø 2.0

EXPERIENCE

Billie

Fintech B2B Payments

<http://www.billie.io>

4/2018 – today

on parental leave since 9/2022

Director of Data Science

Billie is a breakthrough fintech startup that aims to create a new standard for business purchasing. I've started as a hands on data scientist at Billie working on the risk engines and later shifted focus to ml-based internal products. In the end the leads of the teams that were responsible for

- **credit scoring models**,
- **fraud prevention systems**,
- **machine-learning** based **internal products** used in company identification, payment systems
- **products analytics**

were reporting to me. My department had 14 full time employees plus working students. I was a driving force behind the **reshaping of analytical teams** to accomodate shifting company requirements as Billie matured.

Idalab

Agency for Data Science

<http://www.idalab.de>

2/2016 – 2/2018

Data Scientist

Mathematical Modelling, Machine Learning, Artificial Intelligence, Optimization

in a wide range of contexts like IoT, urban planning, finance, mobility, and many more using Python, Pandas, scikit-learn, keras, R and the tidyverse, caret, Shiny, Docker, Elasticsearch, Ansible, AWS (whatever is the right tool for the job).

I also

- **mentored** working students and younger colleagues
- have established **reproducible research** principles in our projects (codified in project templates)
- created an **infrastructure for my colleagues** to easily run analyses in pre-configured cloud environments
- created a Docker-based infrastructure to make our web based demonstrator apps available to our customers
- created scripts to ensure a consistent development setup across company laptops (which **codified our best practices**)

Freelancer

4/2015 – 1/2016

Mathematician

- Reduction of food waste through **predictive modeling** of **time series** for a german vending machine business with **scikit-learn**
- **Statistical consulting** and predictive modeling for in financial services (dunning processes) with **R**
- Supported development of a **machine learning** API for a Berlin-based parking app startup

smartB

Energy Management GmbH

8/2014 – 3/2015

Data Analyst & Visualization Expert

- Translation of **business requirements** into suitable technical solutions
- Leading frontend development (**Project Management, Node, D3, Angular**) and building APIs and the data pipeline (**Python, Pandas**) for our smart meters and **NILM** results
- Drafting and implementing a DevOps process and best practices with **Ansible**

Hitfox Group
Incubator building companies and careers

6/2014 - 7/2014

Zweitag GmbH
Ruby on Rails Consultancy

8/2009 - 5/2014

Visualization and Computer Graphics Research Group
of the University of Münster

10/2008 - 3/2009

Databases and Information Systems Group
of the University of Münster

11/2008 - 3/2009

Institute of Mathematical Statistics
of the University of Münster

10/2007 - 10/2008

Data Scientist

- Prototyped a **Big Data** architecture in a **Telco** context
- Supported a new **FinTech** venture by prototyping the backend architecture and implementing the **MVP** with **Rails**

Software Developer

I was involved in a variety of projects ranging from ecommerce sites and auction systems to business intelligence tools. I worked on the **Rails** backend as well as with frontend technologies such as **Haml**, **SASS**, client-side **Javascript**-frameworks and **D3.js** for data visualization. I helped establish **TDD/BDD** as a company best-practice, introduced new technology such as **Angular.js** as a core Zweitag technology and supported and co-created the corporate **mentorship** program besides mentoring student workers and interns.

Student worker: Voreen Volume Rendering Engine

Worked on the medical imaging engine Voreen in **C++** and **OpenGL**.

Student worker: Project Learnr

Built a **REST**ful webservice for managing assets for an E-Learning platform using **Ruby on Rails**.

Tutor in stochastics / probability theory

Tutorials and correction of student homework.

VOLUNTARY EXPERIENCE

DSSG Berlin

12/2014 - present

Founder

Data Science for Social Good Berlin is a pro bono intermediary for data science. We help nonprofits move into the data age by running workshops and hackathons to help solve their data problems thus connecting them to industry data scientists. See <http://dssg-berlin.org/> and <https://blog.dssg-berlin.org/> for more details.

Open Knowledge Lab Münster

Code for Germany

2/2014 - 12/2014

Lab Lead

in a local community revolving around **civic tech** and **open data**. See <http://codefor.de/muenster> for more details.

Responsibilities

- Organize local meetups
- Stay in touch with local government and journalists
- Guide the participants towards common goals

Meetups and Conferences

Speaker

- [Berlin Open Data Day 2017: Wie wir Einschulungsbereiche in Berlin optimieren](#)
- [Netzwerk Recherche Jahreskonferenz 2017: Machine Learning für Journalisten](#)
- [EKHN Symposium 2017: Data for Good Workshop](#)
- [labtogether 2016: Panelist on effective altruism and workshop on data for good](#)
- [data2day 2016: Natural language processing with recurrent neural networks](#)
- [Pydata 2016: Functional Programming in Python](#)
- [Strange Group Berlin: The Grammar of Graphics and R Metaprogramming](#)
- [Strange Group Berlin: Functional Javascript](#)

Open Source

Occasional contributor

See <http://github.com/kirel>.

LG Brillux Münster

10/2011 - 5/2014

Track&Field Manager Young Athletics (Sportwart Nachwuchs)

Responsibilities

- Organisation and supervision of track&field competitions
- Creation and implementation of young athletics nurturing programs
- Uniting coaches of the LG by shaping the mutual vision

TuS Hiltrup 1930 e.V.

8/2006 - 5/2014

Track&field coach

Coaching young athletes between ages 12 to 19 especially in vertical jumps and **pole vault**. Earned several qualifications and final places in the German youth nationals.

FLVW

8/2006

Track&field coaching license (C-Lizenz)

Heinrich-Tellen-Schule
in Warendorf

8/2002 - 6/2003

Community Service

at a school for special education.

INTERESTS

- Data Science for Social Good
- Data visualization
- Machine learning
- FP (Haskell, Clojure, R, Elixir, ...)
- Open data / data-driven journalism

- Behavioral Science
- Lean startup-methods
- Reading technical books
- Longboarding, wakeboarding, kitesurfing
- Pole vaulting

See <http://kirelabs.org> for personal projects.

REFERENCES

Dr. Matthias Knecht, CEO at Billie (matthias@billie.io)
is my boss at Billie.

Dr. Paul von Büнау, CEO at idalab (paul.buenau@idalab.de)
was my boss at idalab.

Peter Großkopf, CTO at Solaris Bank (peter.grosskopf@hitfoxgroup.com)
was my supervisor at Hitfox.

Julian Schneider, CEO and Founder at Zweitag GmbH (julian.schneider@zweitag.de)
was my boss at Zweitag GmbH.