

# Jonas Fassbender

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## Synopsis

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Software Engineer with a background in Data Science and Machine Learning, focused on predicting with certainty. Well versed in parallel and distributed computing techniques and patterns. Passionate about implementing distributed, data-heavy applications and fast algorithms efficiently while maintaining good software practices. Searching for the most obvious and simplest solution.

## Professional Experience

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**Oct 2020 – now: Self-employed Software Engineer.**

- **carpolice.de**. Insurtech platform for car dealers, enabling them to sell car insurance products. Used by 300+ car dealers to sell 2k+ insurance policies since launch in April 2021. RESTful API-first microservice application written in Rust with a web client written in Dart/Flutter. Hosted on GKE. Used technologies include MongoDB, Redis, Elastic stack, Keycloak, ROOK/Ceph and OpenVPN. Creator and maintainer of 70k+ LoC.
- **German Sport University Cologne**. Created the technical domain specification for an application for teachers to conveniently generate rich semester plans that apply Inquiry-based Learning. Currently in the stage of raising funds for development.
- **Improving the consumer loan approval process of a German bank using Machine Learning**. Applied a Conformal Prediction based classifier to pre-reject loan requests likely to be declined, saving the fee of querying a credit bureau. Able to pre-reject 17% of all rejected requests while maintaining an accuracy of 98%. Currently not applied in production due to a policy shift of the bank in wake of the COVID-19 pandemic.

**Sep 2018 – Jul 2019: Working Student, RLE International.** In a team with other students, explored ways for RLE International to adopt Machine Learning as an emerging technology and create ML-powered products and solutions for customers. Applied different ML-models to OEM ECRs (Engineering Change Requests) of an automobile manufacturer, predicting how much time an ECR is going to take to be resolved.

**Jul 2015 – Aug 2016: Small Business System Administrator, Lieb EDV Beratung.** Set up and maintained backup systems and performed general administration tasks on Windows servers and domains for several small businesses.

## Open Source Contributions

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**Creator and maintainer of various Rust crates.** Libraries containing solutions concerned with (i) meta-programming based abstractions (procedural and declarative macros), (ii) (de)serialization, (iii) the actix-web framework and (iv) solving utility tasks such as parsing an environment file or logging HTTP-requests across multiple services. 30k+ downloads.

**Flutter.** Contributed to the `PaginatedDataTable` widget from Flutter's Material Design library.

**SpiNNaker.** Contributed bug fixes and API enhancements to the Graph and Common Python Frontends of the SpiNNaker software stack.

## Education

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**Sep 2019 - Sep 2020: MSc High Performance Computing with Data Science, University of Edinburgh.** Thesis: Deep Learning on SpiNNaker

**Oct 2016 - Aug 2019: BSc Computer Science, Technical University of Cologne.** Thesis: Approximating the Optimal Threshold for an Abstaining Classifier based on a Reward Function with Regression

## Technologies

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Programming languages	Rust, Dart, Python, JavaScript, Julia, C, Fortran
Cloud Computing	Kubernetes, Docker, Google Cloud Platform, Elastic Cloud on Kubernetes, ROOK/Ceph, Firebase
Data Science	scikit-learn, Keras, Tensorflow, numpy, pandas, DataFrames.jl, Matplotlib
Others	Flutter, HTML+CSS, OpenID Connect, Keycloak, Git, L <sup>A</sup> T <sub>E</sub> X, OpenSUSE/Linux, Bash, SQL, MongoDB, Redis, Elastic stack, RabbitMQ, Kafka, MPI, OpenMP