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Synopsis

Freelancing Software Engineer building enterprise applications and data pipelines. Generalist with a broad range of interests. I like trying out new technologies and feel at ease using them quickly. Well versed in parallel and distributed computing techniques. Concerned about software and API quality. Enticed by Machine Learning. FLOSS enthusiast. Rustacean.

Professional Experience

Oct 2020 – now: Freelancing Software Engineer.

- **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.

- **carpolice.de.** Developed second iteration of the carpolice.de Insurtech platform, which enabled car dealers to sell car insurance products. Used by 300+ car dealers to sell 2k+ insurance policies. 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. 70k+ LoC. Launched in April 2021 and retired in July 2023.

- **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.

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.

FLOSS Contributions

Rust. Creator and maintainer of various Rust crates with 250k+ combined downloads from crates.io. Regular on the Rust Users Forum with 300+ solutions. Occasional contributor to core Rust projects like Cargo and community projects like Actix.

Personal Projects. When I find the time and leisure I am currently working on a fractal image generator called Mgart and a terminal-based bookkeeping tool I use for my work as freelancer (such as invoicing and time keeping) called BAREKEEPER.

Microcontributions. Contributing fixes and enhancements to FLOSS projects I use whenever I find them. Most notable projects I have micro-contributed to in the past are Flutter's Material Design library and the SpiNNaker Python frontends.

Education

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

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. Graduated with a final grade of 1.3.

Technologies

Programming languages	Rust, Dart, Python, JavaScript, Julia, C, Fortran
Web Development	HTML, CSS, tailwind, REST, GraphQL, Actix Web
Cloud Computing	Kubernetes, Docker, Google Cloud Platform, Elastic Cloud on Kubernetes, cert-manager, NGINX Ingress Controller, ROOK/Ceph, Firebase
Data Science	scikit-learn, Keras, Tensorflow, numpy, polars, Matplotlib
Others	Flutter, OpenID Connect, Keycloak, Git, LaTeX, Typst, OpenSUSE/Linux, Bash, SQL, MongoDB, Redis, Elastic stack, RabbitMQ, Kafka, MPI, OpenMP