Resume / CV

Martin Krasser

Homepage: http://www.martin-krasser.de
Profile: http://www.linkedin.com/in/krasserm

I'm a self-employed machine learning and software engineer with 20 years industry experience. My current focus is on deep learning for computer vision, probabilistic machine learning and distributed systems. I'm not only passionate about the scientific part of machine learning projects but also have a strong interest in developing data-driven applications that run reliably in production and are maintainable. I'm a continuous learner and a contributor to several open source projects.

Specialties

Distributed systems, data-intensive applications, data science, machine learning, deep learning, system integration, event sourcing and CQRS, event stream processing, event-driven architectures, message-driven architectures, resilience, scalability, high availability, functional programming, object-oriented programming, probabilistic programming.

Work Experience

Since 04.2018 Freelance machine learning engineer

MerlinOne, https://merlinone.com

- Development of a highly scalable face recognition system, image aesthetic assessment models, a content-based image retrieval service and image restoration models with a focus on single image super-resolution, all based on deep learning approaches.
- Responsible for all data processing, machine learning and software engineering aspects of the projects including deployment to production environments.

Since 04.2011 Freelance machine learning and software engineer

Self-employed, http://www.martin-krasser.de

- Software development and consulting services with a focus on machine learning, data-intensive applications and distributed systems.
- Sabbatical year from 05.2017 to 03.2018 to go deeper into data science, machine learning, statistics and mathematics.

02.2017 – 03.2018 Freelance software engineer and consultant

fine.lines.software GmbH, https://bullet.io

- Design and implementation of a distributed system architecture based on event sourcing with explicit causality that also includes mobile devices.
- Consulting activities and development of prototypes.

09.2014 – 08.2017 Freelance software architect and engineer

Red Bull Media House, http://www.redbullmediahouse.com

- Global distribution of the in-house digital asset management platform. Responsible for architecture, design and implementation.
- Conception and development of Eventuate, a toolkit for event sourcing and event collaboration at global scale with causal consistency.

10.2015 – 07.2017 Freelance software architect and engineer

agido GmbH, http://www.agido.com

- Architecture and design consulting for an online sports betting web application with an event sourcing and event stream processing architecture.
- Usage of Eventuate as technical basis for the web application backend. Development of streaming data analytics extensions for Eventuate.

10.2013 – 02.2014 Freelance software engineer

Lightbend, http://www.lightbend.com/ (formerly Typesafe)

- Conception and development of Akka Persistence.

03.2012 – 10.2013 Freelance software architect and engineer

Eligotech BV, http://www.eligotech.com

- Development of an E-Wallet management web service for customers in the online gambling industry.
- Conception and development of Eventsourced, an open source project for building reliable, scalable and distributed event-sourced applications in Scala.

02.2011 – 04.2011 Software architect and engineer

Talend, http://www.talend.com

- Development of scalability and high-availability concepts and prototypes for the Talend Integration Factory.

01.2005 – 01.2011 Lead software architect and engineer

InterComponentWare AG, http://www.icw.de

- Conception and development of the Open eHealth Integration Platform (IPF), an eHealth integration platform on top of Apache Camel. Development and deployment of IPF applications in several international customer projects.
- Development of LifeSensor, a web-based personal health record.

09.2000 – 12.2004 Senior software architect and engineer

LION bioscience AG, http://www.lionbioscience.com

- Development and optimization of hierarchical clustering algorithms for the drug discovery pipeline of an international pharmaceutical company.
- Development of an integration platform for globally distributed chemical

compute services.
- Development of an activity tracking web application for pharmaceutical research projects.

02.1999 – 08.2000 Software developer, Research assistant

CAME, University of Salzburg, http://uni-salzburg.at

- Development of algorithms and software for ab-initio protein structure prediction. Application of statistical mechanics to evaluate generated protein structures.

07.1998 – 01.1999 Software developer

Austrian Red Cross, http://www.roteskreuz.at/

- Development of a patient transportation management system.

Tools

- Programming languages: Scala, Java, Python, C/C++, Haskell.
- Machine learning: scikit-learn, Tensorflow, Keras, PyTorch, PyMC3, Spark MLlib, R.
- Stream processing: Spark Streaming, Akka Streams, Kafka Streams.
- Databases: MySQL, PostgreSQL, Oracle, Cassandra, HBase, DynamoDB, MongoDB, LMDB, LevelDB, …
- Cloud computing: Amazon Web Services and Google Cloud Platform.
- Java SE and Java EE stack plus many other Java libraries and frameworks.
- Lightbend Reactive Platform plus many other Scala libraries and frameworks.
- Confluent Platform (Apache Kafka and its ecosystem) and Reactive Kafka.

Open Source Projects

The following is an incomplete list of open source projects I'm currently working on or worked on in the past.

Machine learning

- Bayesian machine learning. Collection of notebooks related to Bayesian machine learning. Extended when I'm writing new articles on that topic.
- Super resolution. Keras-based implementation of WDSR, EDSR and SRGAN for single image super-resolution.
- Face recognition. Deep face recognition with Keras, Dlib and OpenCV.
- Machine learning notebooks. Stanford machine learning course exercises re-written in Python and scikit-learn.

Distributed systems and stream processing

- Eventuate. A toolkit for event sourcing and event collaboration at global scale with causal consistency. Founder and lead developer during my work at the Red Bull Media House and active contributor today.
- Streamz. A combinator library for integrating Functional Streams for Scala (FS2), Akka Streams and Apache Camel. Personal project that I'm still actively developing. Functional programming API on top of Apache Camel and successor of Akka Camel.

- [Akka](). A toolkit for building highly concurrent, distributed, and resilient message-driven applications for Java and Scala. Contributed Akka Persistence and Akka Camel.
- [akka-persistence-cassandra](). Storage plugin for Akka Persistence. Started as personal project and now officially maintained by Lightbend.
- [akka-stream-eventsourcing](). Personal project brings to Akka Streams what Akka Persistence brings to Akka Actors: persistence via event sourcing. This is experimental work, inactive at the moment.
- [Eventsourced](). A library for building reliable, scalable and distributed event-sourced applications in Scala. Founder and lead developer during my work at Eligotech. Evolved into Akka Persistence and is not maintained any more.

System integration

- [Open eHealth Integration Platform](). A platform for developing health-care integration solutions. Founder and lead developer during my work at ICW.
- [Apache Camel](). An integration framework based on known Enterprise Integration Patterns. Contributed several integration components as well as core functionality during my work on the Open eHealth Integration Platform.

Articles

- [Blog posts]()
  - at [krasserm.github.io]() since 01.2015,
  - at [krasserm.blogspot.com]() until 12.2014.
- [Introduction to the Open eHealth Integration Platform](). DZone, 05.2011.
- [Akka and Camel](), [Camel in Action](), Manning, 12.2010.
- Geschützte Objekte - Instanzbasierte Zugriffskontrolle: Architekturkonzepte und Implementierung. Java Magazin, 07.2007, 42-49.

Talks

- [11.2015](), Reactive Systems Hamburg - [Event Sourcing and CQRS with Akka Persistence and Eventuate]().
- [10.2015](), Scala User Group Munich - [Event Sourcing and CQRS with Akka Persistence and Eventuate]().
- [06.2011](), Scala eXchange 2011 - [Connecting Akka to the Rest of the World]().
- 11.2009, W-JAX, Munich - [Die Open eHealth Integration Platform]().
- 05.2009, ICW Developer Conference, Walldorf - [The Open eHealth Integration Platform]().
- 05.2008, ICW Developer Conference, Walldorf - [Instance-based Security with the Security Annotation Framework]().
- 11.2007, SOACon, Munich - [Implementierung von Enterprise Integration Patterns auf einem JBI ESB]().

Certificates

- Advanced Machine Learning Specialization.
  - [Bayesian Methods for Machine Learning]().
- 02.2018, [Deep Learning Specialization]().
  - 02.2018, [Sequence Models]().
  - 12.2017, [Convolutional Neural Networks]().

- ○ 12.2017, Structuring Machine Learning Projects.
  - ○ 12.2017, Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization.
  - ○ 12.2017, Neural Networks and Deep Learning.
- 11.2017, Bayesian Statistics.
- 11.2017, Inferential Statistics.
- 04.2014, Machine Learning.
- 01.2014, Principles of Reactive Programming.
- 05.2012, Functional Programming Principles in Scala.

Education

- 1997 - MS in Chemistry (Mag. rer. nat.) with distinction, Karl-Franzens Universität Graz
- 1996 - Various courses in computer science