Thomas Voß

Curriculum Vitae

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https://github.com/vosst

Personal Data

Date of Birth	08.08.1980
Nationality	German
Marital Status	Married, 2 children

Education

08.1990–07.2000 **Abitur**, *Theodor-Körner Schule*, Bochum.

10.2001–07.2008 **Diploma in computer science, minor in theoretical medicine**, *Technische Universität Dortmund*, Dortmund.

Diploma Thesis

Title	Evaluation and Enhancement of the Multi-Objective CMA Evolution Strategy
Supervisors	Prof. Dr. Christian Igel, Prof. Dr. Günter Rudolph

Work Experience

10.2001–04.2004 **Student Assistant**, *Materna GmbH*, Dortmund.

10.2003–01.2004 **Teaching Assignment: Introduction to Linux & Unix**, *BA Mosbach*, Mosbach.
Amount: 93 hours of lectures.

04.2004–08.2005 **Research Assistant**, *Institute for Neuroinformatics*, Ruhr-University Bochum, Bochum.
Programming activities.

08.2005–03.2008 **Software Engineer**, *NISYS GmbH*, Bochum.
Design and implementation of software tools for developing advanced driver assistance systems.

03.2008–10.2011 **CTO, Product Manager NISYS ADAF**, *NISYS GmbH*, Bochum.
Platform architecture and strategic alignment of the entire tool chain, software quality/life-cycle management

01.2008–03.2013 **Project Lead**, *Shark Machine Learning Library*, http://shark-project.sourceforge.net.
Technical lead and organization of overall development activities, implementation of the evolutionary algorithm component.

04.2011–06.2011 **Visiting Scientist**, *Max-Planck-Institute for Informatics*, Saarbrücken.
Cooperation with Prof. Dr. Tobias Friedrich on evolutionary multi- and many-objective optimization.

10.2011–06.2012 **Senior Software Engineer**, *Canonical Services Ltd.*, Isle of Man.
Design, implementation and maintenance of the overall multi-touch infrastructure.

06.2012–04.2013 **Engineering Manager/Tech Lead**, *Canonical Services Ltd.*, Isle of Man.
Assembled the Mir engineering team, leading it from a small prototyping team to one consisting of 8 full-time engineers. Took over technical lead responsibilities, driving design, implementation and qa efforts during the first year of the project.

04.2013–05.2017 **Ubuntu Senior Technical Architect**, *Canonical Services Ltd.*, Isle of Man.

Responsible for the technical architecture of all client-/user-facing aspects of Ubuntu, with a focus on the Ubuntu Phone product. Took over the architecture lead role for Ubuntu Snappy.

Designed and implemented infrastructure and concepts throughout the entire OS, including the application life-cycle, low-level facilities to access existing Android drivers and system services, media-processing, positioning and content-sharing middleware as well as user-facing features like Ubuntu scopes. Aligned short-term goals and long-term vision with engineering teams and stakeholders to ensure continuous delivery of high-quality software.

06.2017–present **Technical Systems Architect**, *AirMap Inc.*, Santa Monica, California.

Responsible for architecting, designing and implementing the core client and core cloud components for delivering and integrating the AirMap services. Advised the dronecore.io team in terms of architecture and technology choices.

Rearchitected and reimplemented the existing backend infrastructure with a "cloud-native" mindset, aiming for deployments across all major cloud infrastructure providers while satisfying varying degrees of GDPR requirements leveraging Kubernetes as the underlying orchestrator for executing an Istio/Envoy service mesh talking HTTP1.1/2.0/gRPC. Prepared the platform for planet-scale realtime operations to deliver mission-critical telemetry and traffic updates to drones during flight, and persisting relevant data to a NewSQL database augmented with a high-performance time-series DB. Integrated realtime traffic information from multiple different data providers including radar-data feeds offered by ANSPs.

Redesigned and reimplemented the core client side component in C++11/14, exposing it to multiple different platforms and runtimes, covering mobile (iOS, Android), desktop (macOS, Windows, Linux) and drone software stacks (Intel Aero).

Collaborated with ecosystem members (e.g., Wing and Uber) on the design, implementation and ongoing development of the Interuss Discovery and Synchronization Service.

Languages

Native language	**German**	*Business fluent (both written and verbal)*
Foreign language	**English**	*Business fluent (both written and verbal)*
Foreign language	**French**	*Basic knowledge*

Technical Skills

Usage: Unix/Linux	Excellent	Dev.: Unix/Linux	Excellent
Bazaar	Excellent	Git	Very Good
CMake	Excellent	Shell scripting	Very Good
GCC/GDB	Excellent	clang	Excellent
C/C++(11/14/17)	Excellent	Go	Excellent
Java	Good	Python	Good
SQL	Very Good		
k8s	Very Good	Istio	Very Good
gRPC	Excellent	Qt/QML	Very Good
boost	Excellent	STL	Excellent

Miscellaneous

Erdös Number 3, Paul Erdös → Joel Spencer → Tobias Friedrich → Thomas Voß

Selected Work Samples

[1] Ubuntu platform api, http://launchpad.net/platform-api
[2] Ubuntu biometryd, http://launchpad.net/biometryd
[3] Ubuntu trust store, http://launchpad.net/trust-store
[4] Ubuntu media hub, http://launchpad.net/media-hub
[5] Ubuntu content hub, http://launchpad.net/content-hub
[6] Ubuntu location service, http://launchpad.net/location-service
[7] Ubuntu scopes, http://launchpad.net/unity-scopes-api
[8] DroneCore, http://dronecore.io
[9] Anbox, http://anbox.io
[10] Fuchsia OS, https://fuchsia.googlesource.com
[11] AirMap Platform SDK, https://github.com/airmap/platform-sdk
[12] Interuss DSS, https://github.com/interuss/dss

Selected Publications

[1] Thomas Voß, Nikolaus Hansen, and Christian Igel. Recombination for learning strategy parameters in the MO-CMA-ES. In M. Ehrgott, C. Fonseca, X. Gandibleux, J.-K. Hao, and M. Sevaux, editors, Proc. 5th International Conference on Evolutionary Multi-Criterion Optimization (EMO), volume 5467 of LNCS, pages 155–168. Springer-Verlag, 2009.

[2] Thomas Voß, Nikolaus Hansen, and Christian Igel. Improved step size adaptation for the MO-CMA-ES. In Martin Pelikan and Jürgen Branke, editors, Proc. 12th Annual Conference on Genetic and Evolutionary Computation Conference (GECCO), pages 487–494. ACM Press, 2010.

[3] Tobias Friedrich, Karl Bringmann, Thomas Voß, and Christian Igel. The logarithmic hypervolume indicator. In Hans-Georg Beyer and William B. Langdon, editors, Proc. 11th International Workshop on Foundations of Genetic Algorithms (FOGA), pages 81–92. ACM Press, 2011.

[4] Karl Bringmann, Tobias Friedrich, Christian Igel, and Thomas Voß. Speeding up many-objective optimization by Monte Carlo approximations. In Artificial Intelligence, Vol. 204, pages 22–29, 2013.