

EdgarKlenske

Machine Learning & Software

date of birth

1986-08-13

contact

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Germany

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focus

machine learning
reliable software

languages

German mother
tongue
English fluency

Python fluency

C++ intermediate

Matlab intermediate

professional experience

- 2021-08 **Independent Consultant** Dr. Edgar Klenske, Renningen, Germany
→present Consulting as a machine learning specialist, Bayesian optimization expert and software enthusiast
- 2020-10 **Co-Founder & CTO** Gauss Machine Learning GmbH, Stuttgart, Germany
→2021-07 Building an ML company from scratch, setting up the infrastructure, implementing the core optimization algorithm
- 2017-04 **Research Scientist** Bosch Center for Artificial Intelligence, Renningen, Germany
→2020-09 Conducting research for papers in the realm of Bayesian optimization, implementing algorithms for practical use-cases, writing several patents
- 2017-02 **Software Developer** Max-Planck-Institute for Intelligent Systems, Tübingen, Germany
→2017-03 Finishing the implementation of my ML-based predictive guiding algorithm for *Open PHD Guiding*, a telescope guiding software
- 2006-08 **Owner** Implexus Computerservice, Tiefenbronn, Germany
→2013-12 Side-business, computer service for small companies and consumers
- 2011-03 **Internship** ESG Elektroniksystem- und Logistik GmbH, Fürstfeldbruck, Germany
→2011-05 Modeling traffic rule knowledge for autonomous driving systems

education

- 2012-11 **PhD in machine learning** Max Planck Institute for Intelligent Systems, Tübingen, Germany
→2017-01 Institute for Dynamical Systems and Control, ETH Zürich
PhD thesis: *Nonparametric Disturbance Correction and Nonlinear Dual Control*.
Supervisor: Melanie Zeilinger (ETH), advisor: Philipp Hennig (MPI).
- 2006-10 **Diplom (M.Sc.) in engineering cybernetics** University of Stuttgart, Germany
→2012-07 Diplom thesis: *Nonparametric System Identification and Control for Periodic Error Correction in Telescopes*.
Supervisors: Bernhard Schölkopf and Frank Allgöwer, advisors: Philipp Hennig, Stefan Harmeling and Gregor Göbel.
Graded 1.0 on German university scale from 1.0 (very good) to 5.0 (fail).
Overall grade point average 1.6 on German university scale.
- 1996-09 **Abitur (A-Levels)** Theodor-Heuss-Gymnasium, Pforzheim, Germany
→2005-06 Grade point average 1.3 on German school scale from 1.0 (very good) to 6.0 (insufficient).

awards & scholarships

- 2015-06 **Associated Fellow** Max Planck ETH Center for Learning Systems
→2017-01 Joint PhD program between the Max Planck Institute for Intelligent Systems and ETH Zürich
- 2010-12 **VDI Elevate Scholar** Verein Deutscher Ingenieure (Association of German Engineers)
→2013-04 Scholarship providing seminars in management and soft skills
- 2005-07 **Ferry-Porsche-Prize** Dr. Ing. hc F. Porsche AG
for best grades in maths and physics in high school

publications (peer-reviewed)

articles in journals

Optimal test pooling for efficient PCR testing of SARS-CoV2

E.D. Klenske

Irish Journal of Medical Science (1971-), 2020. →WWW, →PDF

Dual Control for Approximate Bayesian Reinforcement Learning

E.D. Klenske, P. Hennig

Journal of Machine Learning Research, 2016. →WWW, →PDF

Gaussian Process Based Predictive Control for Periodic Error Correction

E.D. Klenske, M.N. Zeilinger, B. Schölkopf, P. Hennig

IEEE Transactions on Control Systems Technology, 2016. →DOI, →PDF

articles in conference proceedings

Cautious Bayesian Optimization for Efficient and Scalable Policy Search

L.P. Fröhlich, M.N. Zeilinger, E.D. Klenske

Learning for Dynamics and Control, 2021.

Safe optimization for feedrate scheduling of power-constrained milling processes by using Gaussian processes

L. Rattunde, I. Laptev, E.D. Klenske, H.C. Möhring

Procedia CIRP, 2021.

Noisy-input entropy search for efficient robust Bayesian optimization

L.P. Fröhlich, E.D. Klenske, J. Vinogradska, C.G. Daniel, M.N. Zeilinger

International Conference on Artificial Intelligence and Statistics, 2020.

Bayesian optimization for policy search in high-dimensional systems via automatic domain selection

L.P. Fröhlich, E.D. Klenske, C.G. Daniel, M.N. Zeilinger

International Conference on Intelligent Robots and Systems, 2019.

Strategic exploration in human adaptive control

E. Schulz, E.D. Klenske, N.R. Bramley, M. Speekenbrink

Annual Conference of the Cognitive Science Society, 2017

Approximate Dual Control Maintaining the Value of Information with an Application to Building Control

E.D. Klenske, P. Hennig, B. Schölkopf, M.N. Zeilinger

the European Control Conference, 2016.

Nonparametric Dynamics Estimation for Time Periodic Systems

E.D. Klenske, M.N. Zeilinger, B. Schölkopf, P. Hennig

Annual Allerton Conference on Communication, Control, and Computing, 2013. →DOI

patents

Method and device for determining a control strategy for a technical system

L. Fröhlich, E. Klenske

DE102019208263A1, WO2020245218A1

Method and device for determining a control strategy for a technical system

E. Klenske, C. Daniel, L. Fröhlich

DE102019208264A1, EP3748556A1, CN112051731A

Method and device for optimizing a bonding process using a Bayesian optimization process

S. Haag, E. Klenske, C. Daniel, M. Reinold

DE102019206053A1, WO2020216795A1

Method and device for optimizing an inductive heat treatment process using a Bayesian optimization process

J. Pavlovic-Krstic, C. Daniel, M. Hansel, A. Eivazi, J. Vinogradska, J. Müller, E. Klenske, H. Autenrieth

DE102019212171A1, WO2021028111A1

A method of determining NOx concentration and NH3 slip downstream of an SCR catalyst

C. Daniel, H. Markert, V. Imhof, M. Schiegg, E. Klenske, S. Angermaier

DE102017218480A1, EP3698027A1, US2020224570A1, CN111194378A, WO2019076686A1

Device and method for determining a robust optimum of a physical or chemical process according to a bayesian optimisation method

E. Klenske, L. Fröhlich, J. Vinogradska, M.N. Zeilinger

EP3796108A1, CN112541297A

Method and device for localizing a mobile agent in an environment with dynamic objects

S. Scherer, E. Klenske, M. Herman

DE102019214008A1

Method and device for determining model parameters for a control strategy of a technical system with the help of a Bayesian optimization method

E. Klenske, C. Daniel, L. Froehlich

DE102019208262A1, WO2020244987A1

Internal combustion engine and method of controlling an internal combustion engine

E. Klenske, V. Neumann

DE102019215612A1

Method and device for the automated machining of a workpiece with a machine tool

C. Daniel, M. Walther, M. Spinar, E. Klenske

DE102019200482A1, CN111443661A