EdgarKlenske

Machine Learning & Software Enthusiast

date of birth
1986-08-13

contact
Ulmenstraße 16
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Germany

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focus
machine learning
reliable software

languages
German native
English fluent

Python fluent
C++ intermediate
Matlab intermediate

professional experience

2021-08 →present **Independent Consultant** — Dr. Edgar Klenske, Renningen, Germany
Consulting as a machine learning specialist, Bayesian optimization expert and software enthusiast

2020-10 →2021-07 **Co-Founder & CTO** — Gauss Machine Learning GmbH, Stuttgart, Germany
Building an ML company from scratch, setting up the infrastructure, implementing the core optimization algorithm

2017-04 →2020-09 **Research Scientist** — Bosch Center for Artificial Intelligence, Renningen, Germany
Conducting research for papers in the realm of Bayesian optimization, implementing algorithms for practical use-cases, writing several patents

2017-02 →2017-03 **Software Developer** — Max-Planck-Institute for Intelligent Systems, Tübingen, Germany
Finishing the implementation of my ML-based predictive guiding algorithm for *Open PHD Guiding*, a telescope guiding software

2006-08 →2013-12 **Owner** — Implexus Computerservice, Tiefenbronn, Germany
Side-business, computer service for small companies and consumers

2011-03 →2011-05 **Internship** — ESG Elektroniksystem- und Logistik GmbH, Fürstenfeldbruck, Germany
Modeling traffic rule knowledge for autonomous driving systems

education

2012-11 →2017-01 **PhD** in machine learning — Max Planck Institute for Intelligent Systems, Tübingen, Germany; 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 →2012-07 **Diplom (M.Sc.)** in engineering cybernetics — University of Stuttgart, Germany
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 →2005-06 **Abitur (A-Levels)** — Theodor-Heuss-Gymnasium, Pforzheim, Germany
Grade point average 1.3 on German school scale from 1.0 (very good) to 6.0 (insufficient).

awards & scholarships

2015-06 →2017-01 **Associated Fellow** — Max Planck ETH Center for Learning Systems
Joint PhD program between the Max Planck Institute for Intelligent Systems and ETH Zürich

2010-12 →2013-04 **VDI Elevate Scholar** — Verein Deutscher Ingenieure (Association of German Engineers)
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
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