

Prof. Dr. Max PUMPERLA

Max is one of Germany's leading Data Scientists & Engineers, with proficiency in building machine learning solutions and data products, from first prototype to production. Previously a researcher in pure mathematics, he is now specializing in Deep Learning and its applications. Max is author of several machine learning [books](#), [coursera instructor](#), currently among the [top 300 Open Source Python developers](#) in the world, and a professor for Data Science educating the next generation of professionals.

::PERSONAL DATA

PLACE AND DATE OF BIRTH: Leipzig, Germany | 20 July 1984
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::WORK EXPERIENCE

CURRENT SEP 2020	Data Science Professor IUBH Internationale Hochschule <ul style="list-style-type: none">• Focus on Python programming, Big Data Technologies and Reinforcement Learning
CURRENT MAY 2020	Head of Product Research Advisor for Pathmind Inc. (Freelancing) <ul style="list-style-type: none">• R&D in Reinforcement Learning projects• Consulting in product development
APR 2020 AUG 2017	Skymind Inc, San Francisco Deep Learning Engineer & Python Team Lead <ul style="list-style-type: none">• Design and development of the Python interface for Skymind's core product (SKIL)• Managing projects of European customer base• Author and maintainer of Keras model import to DeepLearning4j
JUL 2017 JAN 2017	Collect Artificial Intelligence GmbH, Hamburg Head of Data Science <ul style="list-style-type: none">• Leading Data Science department group of 5 members• Responsible for micro-service architecture & machine learning methodology
MAR 2018 DEC 2016	Aetros UG, Hamburg Co-Founder & Advisor <ul style="list-style-type: none">• Building a deep learning platform for data scientists• Start-up advisory
DEC 2016 JUL 2016	Collect Artificial Intelligence GmbH, Hamburg System Owner Data Science <ul style="list-style-type: none">• Building Data Science infrastructure from ground up (node.js & Python)• Using Reinforcement Learning for debtor communication
JUN 2016 FEB 2015	NumberFour AG, Hamburg Senior Data Scientist & Engineer <ul style="list-style-type: none">• Categorization of Product DB into various taxonomies• Document type classification and object detection with a combination of image- and text-based models• Load prediction of large-scale clusters using LSTMs

JAN 2015 JUL 2013	xplosion interactive GmbH (Dt. Telekom AG), Hamburg Senior Data Scientist <ul style="list-style-type: none"> • Project lead for real-time bidding strategies • Prototyping and design of highly scalable machine learning algorithms for programmatic buying in R and Python • Development of predictive models in Hadoop
JUN 2013 SEP 2011	Deutsche Bank, Berlin/London Senior Quantitative Analyst <ul style="list-style-type: none"> • Financial engineering in Matlab and C++ • Statistical analyses & Data Quality in R and SAS • Large scale strategic project to migrate the companies risk model to a new methodology

:::PUBLICATIONS

2018	“Deep Learning and the Game of Go” - <i>Manning, joint with K. Ferguson</i> , (Book)
2017	“Mastering Machine Learning with Spark 2.x” - <i>Packt, joint with A. Tellez & M. Malohlava</i> , (Book)
2012	“A tropical view on Landau-Ginzburg models” - <i>University of Hamburg joint with M. Carl & B. Siebert</i> , (Paper)
2011	“G2 manifolds from K3 surfaces with non-symplectic automorphism” <i>Journal of Geometry and Physics. Joint with F. Reidegeld</i>
2011	“Unifying constructions in toric mirror symmetry” (PhD thesis, 2011)
2007	“On moduli for toric sheaves on weighted projective spaces” (Diploma thesis, 2007)

:::EDUCATION

AUG 2011 SEP 2007	University of Hamburg and Albert-Ludwigs-University Freiburg, Germany PhD thesis in MATHEMATICS Overall mark “Magna cum laude” (1.0)
OCT 2006	Technical University of Kaiserslautern, Germany Supplementary studies in ECONOMICS (second degree)
JUL 2007 APR 2004	Technical University of Kaiserslautern, Germany Diploma in MATHEMATICS and COMPUTER SCIENCES Overall mark 1.0 (best possible 1.0)
MAR 2004	Otto-Hahn-Gymnasium Landau, Germany Degree: Abitur

:::OPEN SOURCE FOOTPRINT

betago	Python-based Go bot under active development
dlgo	Comprehensive framework for developing Go bots
elephas	Python framework for Distributed Deep Learning with Keras and Spark
hyperas	Simple convenience wrapper for Keras & Hyperopt
ScalpaGoZero	A faithful implementation of AlphaGo Zero in Scala
clapton	Serverless machine learning framework
Contributions	Keras contributor, TensorFlow contributor, Hyperopt maintainer

:::SKILLS

Languages	German (Mothertongue) English (Operational) French, Spanish (Basic)
Programming	Python (Expert) Scala, Java, SQL (Intermediate) C/C++, R, Matlab, Shell scripting (Basic)
Web	JavaScript, HTML, CSS (Basic)
Math	Algebraic Geometry, Differential Geometry, Topology, Algebra, Category Theory, Probability Theory
ML	Deep working knowledge of techniques in Supervised, Unsuper- vised and Reinforcement Learning, focus on Deep Learning
ML toolkit	Keras, TensorFlow, PyTorch, DL4J, scikit-learn, numpy, scipy, TensorFlow, pandas, spacy, opencv, SparkML, Spark MLLib, Ma- hout, Hyperopt
Databases	Postgres, MySQL, HDFS, Hive, S3, Elasticsearch, MongoDB
Cloud	AWS, Microsoft Azure, Google Cloud Engine , Heroku
Big Data	Spark & Hadoop ecosystems
CI/CD	Travis, Jenkins, CircleCI

:::AWARDS & SCHOLARSHIPS

SEP 2009	Scholarship "Oberwolfach Leibnitz Graduate Fellow"
JUN 2008	PhD scholarship of the "Studienstiftung des deutschen Volkes"
APR 2008	PhD scholarship of the "Land Baden-Württemberg"
OCT 2007	Award of the Department of Mathematics at the TU Kaisers- lautern for exceptional achievements (best Diploma 2007)

::: ORGANIZATIONAL (CONFERENCES & FUNDS)

2012	Co-organizer of "Géométrie Algébrique en Liberté" conference, Grenoble, France
2011	Co-organizer of "Géométrie Algébrique en Liberté" conference, Berlin, Germany
2009	Co-organizer of "BPS state counting, stability conditions and de- rived algebraic geometry" summer school, Hamburg University
2009	Fund application for DFG research training group "Mathematics inspired by QFT and String theory", Hamburg University
2009 - 2011	Organizer of mathematics PhD student seminar

::: TEACHING EXPERIENCE AND SELECTED TALKS

2020	Keynote on "Computer Go" (US Go Congress, Estes Park, Colorado)
2019	Keynote on "The Building Blocks of Superhuman Poker AI" (code.talks conference, Hamburg)
2018	Keynote on "Serverless Machine Learning" (PyData conference, Hamburg)
2018	Keynote on "Serverless Machine Learning" (PyData conference, Hamburg)
2018	Keynote on "Bridging the Gap in Enterprise AI" (Solutions, Hamburg)
2017	Lecture on "Building Recommender Systems" (Schibsted, Oslo)
2017	Keynote on "Introduction to Machine Learning with Eclipse DeepLearning4j" (EclipseCon, Ludwigsburg)
2017	Talk and panel discussion on "How to predict ICU mortality with digital health data" (Nvidia GTC Europe, Munich)
2017	Lecturer for course on "Applied AI with DeepLearning" (Coursera)
2017	Keynote on "From experimentation to production" (Pi school, Rome)
2017	Keynote on "The principles behind super-human level computer Go" (Hamburg.ai conference)
2017 - 2013	Mentor for applied machine learning projects (Pi school, Rome)
2013	In-house lecture series on "Real-time bidding strategies" (Deutsche Telekom, Hamburg)
2010	Talk on "A tropical view on Landau-Ginzburg models", (Coimbra University)
2009/10	Tutor for "Mathematical Foundations" (Hamburg)
2008	Lecturer for seminar on "Tropical Geometry" (Freiburg)
2007/08	Tutor for "Linear Algebra I" (Freiburg)
2007/08	Tutor for seminar on "Convex Sets and Functions" (Freiburg)
2007	Tutor for "Topology" (Kaiserslautern)
2006/07	Tutor for "Commutative Algebra" (Kaiserslautern)
2006	Tutor for "Mathematical Foundations II" (Kaiserslautern)
2005/06	Tutor for "Calculus I" (Kaiserslautern)
2005	Tutor for "Mathematical Foundations I" (Kaiserslautern)

::: INTERESTS AND RESPONSIBILITIES

ACTIVITIES	Organizer of various international conferences, a network for PhD fellows, mentor of the Chess group at TU Kaiserslautern and committee member of the university cinemas in Freiburg and Kaiserslautern
INTERESTS	Building & hacking things, strategy board games, Taekwondo, running marathons, traveling

