

# CURRICULUM VITAE OF PROF. KARSTEN BORGDWARDT

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## EMPLOYMENT & EDUCATION HISTORY

2017 – now



**Full Professor of Data Mining**  
Department Biosystems Science and Engineering  
ETH Zürich

2014 – 2017



**Associate Professor of Data Mining**  
Department Biosystems Science and Engineering  
ETH Zürich

2011 – 2014



**Associate Professor (W2) of Data Mining in the Life Sciences**  
Department of Computer Science  
Eberhard Karls Universität Tübingen

2008 – 2014



**W2 Research Group Leader (tenured since 2010)**  
Machine Learning and Computational Biology Research Group  
Max Planck Institutes Tübingen, Directors D. Weigel and B. Schölkopf

2007 – 2008



**Postdoctoral Research Associate**  
Machine Learning Group, Chairholder: Prof. Zoubin Ghahramani  
University of Cambridge

2005 – 2007



**PhD Student & Research Assistant**  
Data Mining & Database Unit, Chairholder: Prof. Hans-Peter Kriegel  
Ludwig-Maximilians-Universität München

2004



**Academic Visitor (for writing master thesis in Computer Science)**  
Machine Learning Group, Prof. Alex Smola, Prof. SVN Vishwanathan  
NICTA Canberra, Australia

2002 – 2003



**Student of Biology (M.Sc. in 2003)**  
Department of Zoology  
University of Oxford

1999 – 2004






**Student of Computer Science (Diplom in 2004)**  
Department of Mathematics, Computer Science & Statistics  
Ludwig-Maximilians-Universität München  
(on leave for studying in Oxford during academic year 2002/03)

## AWARDS & HONORS

- 2021 **Swiss Institute of Bioinformatics (SIB) Remarkable Output** award (“Must-read paper of 2020”) as joint last author of *Höllner et al., Nature Communications 11, Article number: 3551 (2020)*
- 2021 **Swiss Institute of Bioinformatics (SIB) Graduate Paper Award** as supervisor and co-author of PhD student & co-awardee Thomas Gumbsch for *Hyland et al, Nature Medicine, volume 26, pages 364–373 (2020)*
- 2019 **ELLIS Fellow and ELLIS Faculty Member**
- 2018 **Scientific Coordinator** of a **Marie Curie Innovative Training Network** on *Machine Learning Frontiers in Precision Medicine* (2019-2022, 8 countries, 14 labs, 14 PhD students, [mlfpm.eu](http://mlfpm.eu))
- 2018 One of **"25 individuals who have the potential to shape the next 25 years"** according to *Focus Magazine* (Edition of January 13, 2018)
- 2018 **Scientific Coordinator** of the **SPHN-PHRT Driver Project** "Personalized Swiss Sepsis Study" (jointly with Dr. Adrian Egli (USB), 5.3 million CHF funding, 22 partner labs, 4 years)
- 2018 **President** of the **Community of Special Interest** for *Machine Learning in Computational and Systems Biology* in the International Society for Computational Biology, 2017-2020
- 2017 **Golden Owl Award** for Best Teaching in the Department Biosystems, ETH Zürich
- 2016 One of the **"Top 40 under 40 in Science and Society"** in Germany according to Business Journal *Capital*
- 2015 **Starting Grant** Awardee (ERC backup scheme of the Swiss National Science Foundation, 1.42 million CHF, 5 years, started May 1st, 2015)
- 2015 **Elected Chairman of the Steering Committee** of the Annual Meeting for *Machine Learning in Systems Biology* (MLSB), 2015-2018
- 2015 One of the **"Top 40 under 40 in State & Society"** from Germany (including 12 scientists) according to Business Journal *Capital*
- 2014 One of the **"Top 40 under 40 in Science"** from Germany according to Business Journal *Capital*
- 2013 **Alfried-Krupp-Förderpreis für junge Hochschullehrer** (Annual Krupp award of 1 million EUR for one professor in Germany of age less than 38)
- 2012 **Scientific Coordinator** of a **Marie Curie Initial Training Network** on *Machine Learning in Personalized Medicine* (2013-2016, 8 countries, 12 labs, 14 PhD students, [mlpm.eu](http://mlpm.eu))

- 2009 **NIPS Outstanding Student Paper Award** as supervisor and co-author of PhD student & awardee Nino Shervashidze (*out of 1105 submissions*)
- 2007 **Heinz-Schwärtzel-Dissertation-Award** for Foundations of Computer Science (*Best PhD thesis award in Computer Science at TUM, LMU and UniBw München*)
- 2007 Scholar of the **German Academic Merit Foundation (Studienstiftung des deutschen Volkes)** as PhD student
- 2002 Scholar of the **German Academic Merit Foundation (Studienstiftung des deutschen Volkes)** as undergraduate student
- 1999 Scholar of the **Bavarian Foundation for the Gifted (BayBFG)** (*250 students out of 30,000 students per year in Bavaria*)
- 1999 Scholar of the **Stiftung Maximilianeum** in Munich (*5-10 students out of 30,000 students per year in Bavaria*)

## ACADEMIC DEGREES

- 2007 **Ph.D. in Computer Science (obtained on July 5, 2007)**, *summa cum laude*  
 Data Mining & Database Unit, Chairholder: Prof. Hans-Peter Kriegel  
 Ludwig-Maximilians-Universität München
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- 2004 **Diplom (M.Sc. equivalent) in Computer Science**  
 Department of Mathematics, Computer Science & Statistics  
 Ludwig-Maximilians-Universität München
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- 2003 **M.Sc. in Biology**  
 Department of Zoology  
 University of Oxford
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## THIRD-PARTY FUNDING AND INDUSTRIAL EXPERIENCE

- 2021 Co-applicant in **SNSF Project** “Derivation of pediatric sepsis phenotypes using machine learning applied to clinical, functional and genomic data from the swiss pediatric sepsis study” (own budget: 330.000 CHF, 4 years)
- 2020 Participant in **National Centre of Competence in Research “AntiResist”** (own budget: 200.000 CHF, 4 years)
- 2019 Scientific Coordinator of a **Marie Curie Initial Training Network** (in total: 14 PhD students at 14 labs in 8 countries, network budget: 3.64 million EUR, own budget: 0.3 million EUR, 4 years)

- 2018      **Scientific Coordinator** of the **SPHN-PHRT Driver Project** "Personalized Swiss Sepsis Study" (jointly with Dr. Adrian Egli (USB), 22 partner labs, total budget: 5.3 million CHF funding, own budget: 1.08 million CHF, 4 years)
- 2015      Partner node in **Horizon2020 research network** on MRI classification (own budget: 520.000 CHF, 4 years)
- 2014      **Starting Grant** for *Significant Pattern Mining* (ERC backup scheme of the Swiss National Science Foundation, 1.42 million CHF, 5 years)
- 2013      **Alfried Krupp Award** for Young Professors (1 million EUR, 5 years)
- 2013      Scientific Coordinator of a **Marie Curie Initial Training Network** (in total: 14 PhD students at 12 labs in 8 countries, network budget: 3.75 million EUR, own budget: 0.75 million EUR, 4 years)
- 2012      Co-founder & scientific mentor of the Tübingen-based **bioinformatics service company Computomics** (computomics.com); supported by the High-Tech Venture Capital Funds of the German Federal Government since 2015.
- 2010      **Research grant from DFG** for *Kernels on Large, Labeled Graphs* (German Research Council, 3 years approx. 240.000 EUR)

## MAJOR PROFESSIONAL SERVICES

### Departmental Roles at ETH Zurich

- Deputy department chair (since 2021)
- Responsible professor for departmental IT services (since 2019)
- Chairman of the departmental doctoral committee (since 2016)

### Scientific Coordinator

- Marie Curie Initial Training Network on *Machine Learning Frontier in Precision Medicine* (2019-2022, 14 labs with 14 PhD students)
- SPHN-PHRT Driver Project *Personalized Swiss Sepsis Study* (2018-2022, jointly with Prof. Adrian Egli (USB), 22 partner labs)
- President of the Community of Special Interest for *Machine Learning in Computational and Systems Biology* in the International Society for Computational Biology, 2017-2020
- Elected Chairman of the Steering Committee of the Annual Meeting for *Machine Learning in Systems Biology* (MLSB, 2015-2020)
- Scientific Coordinator of the Marie Curie Initial Training Network on *Machine Learning for Personalized Medicine* (2013-2016, 12 labs with 14 PhD students)

### Board Member or Expert Reviewer

- Scientific Advisory Board Member of Tübingen's Quantitative Biology Center QBIC (2015-)
- Steering Board Member of the Swiss Data Science Center (2015-)
- Steering Board Member of the ETH Nexus Personalized Medicine Platform (2014-2020)
- Expert Reviewer for the Swiss National Ethics Committee on "Machine Learning for the Analysis of Biobanks" (2014)

### **Editor**

- OUP Bioinformatics (Associate Editor, since 2021)
- Journal of Machine Learning Research (Action Editor, since 2013)
- Springer's Machine Learning Journal (Editorial Board Member 2011-2018)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (Associate Editor 2012-2016)

### **Programme Chair**

- Machine Learning Frontiers in Precision Medicine Summer School 2021 (online, free to the public)
- MLFPM Winter Symposium 2021 (online, free to the public)
- Machine Learning Frontiers in Precision Medicine Summer School 2020 (online, free to the public)
- Machine Learning Frontiers in Precision Medicine Summer School 2019 (Basel/Muttenz, 100 participants)
- ECML/PKDD Journal Track Co-Chair 2019
- Machine Learning for Personalized Medicine Conference 2016 (Barcelona, 70 participants)
- Machine Learning for Personalized Medicine Summer School 2013 (Tübingen, 65 participants)
- Machine Learning for Systems Biology Meeting 2012 (Basel, 150 participants)
- Machine Learning Summer School 2011 (Purdue, co-organizer, 200 participants)
- NIPS Workshop: Personalized Medicine Workshop 2011 (Granada, Workshop with 50 participants)
- Mining and Learning on Graphs Meeting 2009 (Leuven, 100 participants)
- NIPS Workshop: Transfer Learning on Structured Data 2009 (Vancouver, 50 participants)
- NIPS Workshop: Structured Input Structured Output 2008 (Vancouver, 50 participants)

Furthermore, frequently area chair at the leading machine learning conferences (ICML, NeurIPS, AISTATS, KDD, ECML, ICML, IJCAI), reviewer for numerous leading journals, conferences, funding agencies and faculty recruiting committees in Machine Learning, Data Mining, Applied Mathematics, Bioinformatics and Genetics.