Manuel Gloeckler

Personal Data

Place and Date of Birth:	Laichingen, Germany | 29 May 1998
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Research Interests

My research interests lie at the intersection of machine learning, statistics, and practical scientific applications. Some areas of interest include approximated Bayesian inference, neural density estimation, generative models, robustness, and probabilistic programming.

Work Experience

Feb 2022 – Sep 2020 | **Research assistant**
University Tübingen, Computational Systems Biology, Junior Prof. Dr. Andreas Dräger.
Analysis of microbiotic interactions in the human nasal microbiome through genome-scale modeling and linear programming, supervised by Dr. Reihaneh Mostolizadeh.

Feb 2019 – Oct 2019 | **Student assistant**
University Tübingen, Theory of Machine Learning Group, Prof. Dr. Ulrike von Luxburg.
Teaching assistant for the undergraduate lecture "Algorithms". I gave tutorial sessions and corrected exercise sheets as well as exams.

Education

Now – Apr 2022 | **PhD student at the International Max-Planck Research School for Intelligent Systems (IMPRS-IS)**
University Tübingen, Machine Learning in Science, Prof. Dr. Jakob Macke.
Focus on the research and evaluation of simulation-based (or likelihood-free) inference methods, with specific attention to their robustness and efficiency.

Mar 2022 – Okt 2019 | **Master of Science in Bioinformatics, University Tübingen**
Strong focus in machine learning methods and theory including probabilistic, statistical and deep machine learning, as well as its applications in life sciences
Graduation with distinction [certificate].
Thesis: *"Variational methods for simulation-based inference"* [pdf]
| Supervisor: Jakob Macke
Average grade 1.15 (3.9 GPA equivalent) | Detailed List of Courses

Sep 2019 – Okt 2016 | **Bachelor's Degree in Bioinformatics, University Tübingen**
Graduation with distinction [certificate].
Thesis: *"The landscapes of CD8+ T cell immunogenicity from a self-tolerance based perspective in sequence space"* [pdf]
| Supervisor: Oliver Kohlbacher
Average grade 1.31 (3.7 GPA equivalent) | Detailed List of Courses

Jul 2016 | **A-levels, Joachim-Hahn-Gymnasium**
Average Grade 2.1 (3.0 GPA equivalent)

Selected publications

2023	**Adversarial robustness of amortized Bayesian inference** [arxiv] Manuel Gloeckler, Michael Deistler, Jakob H. Macke. Accepted as a poster for ICML 2023
2022	**Variational methods for simulation-based inference** [arxiv]. Manuel Gloeckler, Michael Deistler, Jakob H. Macke. Accepted as a spotlight for ICLR 2022.

Other work experience

Conferences:	Poster presentation at ICML 2023. Spotlight presentation at ICLR 2022
Summer schools:	Cambridge ELLIS Machine Learning Summer School and poster presentation 2022 [certificate]. Machine Learning Summer School 2021 [certificate].
Reviewing:	IOP trusted reviewer [certificate].
Other pub.:	*Towards the human nasal microbiome: Simulating D. pigrum and S. aureus* (R Mostolizadeh, M Gloeckler, A Draeger) [frontiers]. *NCMW: A Python Package to Analyze Metabolic Interactions in the Nasal Microbiome* (M Gloeckler, A Draeger, R Mostolizadeh) [frontiers]. *Hierarchical modelling of microbial communities* (M Gloeckler, A Draeger, R Mostolizadeh) [Bioinformatics]

Programming Languages

Python :	**Proficient:** Extensive experience in machine learning libraries such as PyTorch and JAX.
Java :	**Intermediate skills**: Successfully completed several university projects in Java.
CUDA/C/C++ :	**Basic skills**: Acquired foundational skills through university courses and self-study.

Languages

German:	Mother tongue
English:	Proficient
French:	B1 level

Master of Science in Bioinformatics

Grades

Course	Grade	ECTS
Sequence Bioinformatics	1.0	9
Structure and Systems Bioinformatics	1.0	9
Algorithms in Bioinformatics	1.0	3
Bioinformatics Tools	1.0	3
Cheminformatics	1.0	6
Phylogeny and Evolution	1.0	6
Medical Data Science	1.3	6
Bioinformatics Tools	1.0	3
Massively Parallel Computing V	1.0	6
Probabilistic Machine Learning	1.0	9
Advanced Probabilistic Machine Learning - Modeling and Applications	1.7	6
Advanced Artificial Neural Networks	1.7	6
Mathematics for Machine Learning*	1.7	6(9)
Statistical Machine Learning*	(2.0)	(9)
Time Series*	(3.0)	(6)
Introduction to Computational Neuroscience	1.0	6
Computational Ecology	1.0	6
Advance Immunology	2.0	3
Astrobiology: life in extreme environments	1.7	3
Master thesis	1.0	30
	Total	120 (138)
	Grade	**1.15**

A star (*) indicates that the course was taken as an additional qualification (e.g., due to personal interest) or can only be partially accounted because of examination regulations. Official version can be found here.

Undergraduate Degree in Bioinformatics

Grades

Original Course Title (Ger)	Course (Eng)	Grade	ECTS
Informatik I	Computer Science I	1.0	9
Informatik II	Computer Science II	1.0	9
Theoretische Informatik	Theoretical computer science	1.0	9
Algorithmen	Algorithms	1.0	9
Teamprojekt	Teamproject	1.0	9
Grundlagen des maschinellen Lernens	Basics of machine learning	1.3	6
Mathematik I	Math I	1.0	9
Mathematik II	Math II	2.0	9
Mathematik III	Math III	1.7	9
Stochastik	Stochastic	2.0	6
Numerik für Mathematiker (*)	Numerics for Mathematicians	(3.3)	9
Einführung in die Bioinformatik	Introduction to Bioinformatics	1.0	3
Grundlagen der Bioinformatik	Basis of Bioinformatics	1.0	3

Grundlagen der Bioinformatik (SEM)	Grundlagen der Bioinformatics Seminar	1.0	3
Microbiome Analysis	Microbiome Analysis	1.3	6
Structure-Based Drug Design	Structure-Based Drug Design	1.0	6
BMZ (Biomoleküle und Zelle)	Biomolecules and cells	1.3	6
Mol. Biol. I (Zellbiologie und Genetik)	Cell Biology and Genetics	2.0	6
Mol. Biol. II (Mikrobiologie)	Microbiology	1.7	3
Einführung in die Immunologie	Introduction to Immunology	1.3	3
Chemie I	Chemistry I	2.0	9
Allg. Biochemie	General biochemistry	1.7	6
Tierphysiologie (Neurobiologie)	Animal Physiology (Neurobiology)	1.0	9
Physik. Chemie (Chemie II)	Physical chemistry	1.7	6
Bachelorarbeit	Bachelor thesis	1.3	15
		Total	180
		GRADE	**1.31**

A star (*) indicates that the course was taken as "Studium Professional", hence does not account for the overall grade. The official version can be found here.