JEREMY DON WAYLAND PhD Candidate | Research Scientist

- % jeremy-wayland.me in linkedin.com/in/jeremy-wayland
- github.com/jeremy-wayland github.com/aidos-lab
- @ jeremy.don.wayland@gmail.com @ jeremy.wayland@helmholtz-muenchen.de

HONORS AND AWARDS

2020-2022 Awarded a full tuition Fowler Computer Science Fellowship for the CADS program at Chapman University.

2019 Graduated with honors from Berkeley Mathematics by thesis and advanced coursework performance.

2018 Awarded the Mckinley Fellowship by SURF L&S at UC Berkeley for work on observing jet simulations.

PROFESSIONAL EXPERIENCE

Present

DOCTORAL RESEARCHER, AIDOS Lab, Helmholtz Munich

August 2022

- > Doctoral Candidate working at the Institute of AI for Health.
- > Supervisor: Dr. Bastian Rieck.
- > Research Interests: topological and geometric deep learning, graph learning and discrete curvature, diffusion modeling, applying topological data analysis to healthcare and climate change.

June 2022 January 2022

GRANT FUNDED RESEARCH COMPUTATIONAL SCIENTIST, Children's Hospital of Orange County Orange CA

- > Predicting onset of sepsis for ED patients using machine learning and artificial intelligence.
- > Spearheading multicenter collaboration between CHOC, UCI, McMaster, and University of Iowa for predictive risk analysis of recurring urinary tract infections (UTIs) among children using machine learning and topological data analysis.

Sepsis Urology Deep Learning Python R Computational Topology Persistent Homology

December 2021 July 2021

DATA SCIENCE RESEARCH INTERN, Children's Hospital of Orange County Orange CA

- > Implementing machine learning models to improve hospital operations and predict diagnoses.
- > Assisting Physicians with computational research questions.

Python R Machine Learning Care Coordination Improving Quality of Care

December 2021

SOFTWARE/RESEARCH DEVELOPER (PART TIME), Encryptek LLC Lake Forest CA

- > Deploying Radium product-line onto Amazon's Cloud Marketplace via AWS FPGA development. January 2020
 - > Cryptography and Cryptocurrency market research.
 - > Hardware resales.

Amazon Cloud Computing AWS EC2 Development C++ Verilog FPGAs Hardware Blockchain

April 2020 February 2020

Machine Learning, INDEPENDENT CONSULTANT Lake Forest CA

Madiba LLC SAP SOFTWARE CONSULTING

- > Incorporated predictive analytics using open source tools in tandem with in house SAP tools to compare performance and flexibility of different machine learning packages.
- > Built TensorFlow models to analyze multivariate irregular time series data.

TensorFlow SAP python jupyter notebooks pandas



Research Experience

December 2019 April 2019

SENIOR HONORS THESIS, advised by Dr. Wesley Holliday, UC Berkeley Department of Mathematics

- > An Investigation into Strategic Voting and the Commutative Monoidal Structure of Elections
- > Characterization of specific uncertainty sets in regards to prevalent strategic voting situations.
- > Application of categorical machinery developed by John Baez (UC Riverside), displaying the underlying structure of elections.

Applied Category Theory | Social Choice Theory | Strategic Voting

December 2018 May 2018

SURF RESEARCH FELLOW, advised by Dr. Richard Anantua, UC Berkeley

- > Built C++/Python pipeline from scratch to generate theoretical images by observing GRMHD simulations using different radiative processes.
- > Resulting Publication : Emission Modeling in the EHT-ngEHT Age, published in *Galaxies*.

General Relativity | Magento-Hydrodynamics | Quantum Field Theory | Radiative Processes | Python | C++

December 2019 April 2018

UNDERGRADUATE RESEARCHER, Alexei Filippenko Lab UC Berkeley Dept. of Astronomy

- > Gather observational astronomy data using KAIT and Nickel telescopes: Supernovae Detection.
- > Investigate the nature of the expanding universe by analyzing supernovae.
- > 1 MNRAS Publication: Photometry data release of 70 SESNe
- > 3 LOSS Transient Discoveries: 2018-10-02, 2018-09-18, 2018-07-11.
- > Additional MNRAS Contributions: 1,2,3,4,

Image Analysis Observational Astronomy Spectra Analysis



EDUCATION

Present August 2022

HELENA GRADUATE SCHOOL, Helmholtz Munich and CIT, Technical University of Munich (TUM)

- > PhD Candidate in *Mathematics*, School of Computation, Information and Technology (CIT) at TUM.
- > Doctoral Researcher at Helmholtz Munich.
- > Supervisors: Dr. Bastian Rieck and Dr. Ulrich Bauer.

May 2022 September 2020

SCHMID COLLEGE OF SCIENCE AND TECHNOLOGY, Chapman University

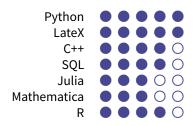
- > M.S. Computational and Data Sciences
- > Coursework Completed: Mathematical Modeling, Multivariate Statistics and Data Analysis, Data Mining and Machine Learning, Information Theory, Game Theory, Natural Language Processing.

December 2019 August 2015

University of California, Berkeley

- > B.A. Mathematics (Honors) | B.A. Astrophysics | Minor in Logic
- > Relevant Coursework: Quantum Mechanics, Quantum Logic, Point-Set/Algebraic/Differential Topology, Algebra, Intuitionistic Logic, Computability, Set Theory, Relativistic Cosmology, Planetary Astrophysics, Data Science, Machine Learning

Programming Languages



Skills and Interests

- > Conversational German
- > Surfing
- > Soccer
- > Cello and piano performance
- > Music composition and production
- > Skiing and Snowboarding

S REFERENCES

Dr. Bastian Rieck

Dr. Richard Anantua

Principal Investigator, Helmholtz Munich Post Doctoral Fellow, Harvard-Smithsonian Center for Astrophysics

@ bastian@rieck.me

+49 176 21196318

@ ranantua@cfa.harvard.edu

1 (650) 468-4608

Dr. Andrew Moshier

Professor, Chapman University

@ moshier@chapman.edu

1 (714) 997-6628

Dr. Louis Ehwerhemuepha

Researcher, Children's Hospital of Orange County

@ lehwerhemuepha@choc.org

L 1 (714) 262-0171