

JEREMY DON WAYLAND

PhD Candidate | Research Scientist

🌐 jeremy-wayland.me [in linkedin.com/in/jeremy-wayland](https://www.linkedin.com/in/jeremy-wayland)
🐙 github.com/jeremy-wayland github.com/aidos-lab
✉ jeremy.don.wayland@gmail.com [@ jeremy.wayland@helmholtz-muenchen.de](mailto:jeremy.wayland@helmholtz-muenchen.de)
📍 München 📞 +49 152 2716 2240 🇺🇸 U.S. Citizen

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

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| Present
August 2022 | DOCTORAL RESEARCHER, AIDOS Lab, Helmholtz Munich <ul style="list-style-type: none">➤ Doctoral Candidate working at the Institute of AI for Health.➤ Supervisor : Dr. Bastian Rieck.➤ Research Interests : <i>topological and geometric deep learning, graph learning and discrete curvature, diffusion modeling, applying topological data analysis to healthcare and climate change.</i> |
| June 2022
January 2022 | GRANT FUNDED RESEARCH COMPUTATIONAL SCIENTIST, Children's Hospital of Orange County Orange CA <ul style="list-style-type: none">➤ 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. <div>Sepsis Urology Deep Learning Python R Computational Topology Persistent Homology</div> |
| December 2021
July 2021 | DATA SCIENCE RESEARCH INTERN, Children's Hospital of Orange County Orange CA <ul style="list-style-type: none">➤ Implementing machine learning models to improve hospital operations and predict diagnoses.➤ Assisting Physicians with computational research questions. <div>Python R Machine Learning Care Coordination Improving Quality of Care</div> |
| December 2021
January 2020 | SOFTWARE/RESEARCH DEVELOPER (PART TIME), Encryptek LLC Lake Forest CA <ul style="list-style-type: none">➤ Deploying Radium product-line onto Amazon's Cloud Marketplace via AWS FPGA development.➤ Cryptography and Cryptocurrency market research.➤ Hardware resales. <div>Amazon Cloud Computing AWS EC2 Development C++ Verilog FPGAs Hardware Blockchain</div> |
| April 2020
February 2020 | Machine Learning, INDEPENDENT CONSULTANT Lake Forest CA
<i>Madiba LLC SAP SOFTWARE CONSULTING</i> <ul style="list-style-type: none">➤ 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. <div>TensorFlow SAP python jupyter notebooks pandas</div> |

RESEARCH EXPERIENCE

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| December 2019
April 2019 | SENIOR HONORS THESIS, advised by Dr. Wesley Holliday , UC Berkeley Department of Mathematics <ul style="list-style-type: none">➤ <i>An Investigation into Strategic Voting and the Commutative Monoidal Structure of Elections</i>➤ 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. <div>Applied Category Theory Social Choice Theory Strategic Voting</div> |
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December 2018 May 2018	SURF RESEARCH FELLOW, advised by Dr. Richard Anantua , UC Berkeley <ul style="list-style-type: none"> > 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 <i>Galaxies</i>. <div> General Relativity Magento-Hydrodynamics Quantum Field Theory Radiative Processes Python C++ </div>
December 2019 April 2018	UNDERGRADUATE RESEARCHER, Alexei Filippenko Lab UC Berkeley Dept. of Astronomy <ul style="list-style-type: none"> > Gather observational astronomy data using KAIT and Nickel telescopes : <i>Supernovae Detection</i>. > 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, <div> Image Analysis Observational Astronomy Spectra Analysis </div>

EDUCATION

Present August 2022	HELENA GRADUATE SCHOOL, Helmholtz Munich and CIT, Technical University of Munich (TUM) <ul style="list-style-type: none"> > PhD Candidate in <i>Mathematics</i>, 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 <ul style="list-style-type: none"> > M.S. Computational and Data Sciences > Coursework Completed : <i>Mathematical Modeling, Multivariate Statistics and Data Analysis, Data Mining and Machine Learning, Information Theory, Game Theory, Natural Language Processing.</i>
December 2019 August 2015	UNIVERSITY OF CALIFORNIA, Berkeley <ul style="list-style-type: none"> > B.A. Mathematics (Honors) B.A. Astrophysics Minor in Logic > Relevant Coursework : <i>Quantum Mechanics, Quantum Logic, Point-Set/Algebraic/Differential Topology, Algebra, Intuitionistic Logic, Computability, Set Theory, Relativistic Cosmology, Planetary Astrophysics, Data Science, Machine Learning</i>

</> PROGRAMMING LANGUAGES

Python	●	●	●	●	●
LaTeX	●	●	●	●	●
C++	●	●	●	●	○
SQL	●	●	●	●	○
Julia	●	●	●	○	○
Mathematica	●	●	●	○	○
R	●	●	●	●	○

+ SKILLS AND INTERESTS

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

“ REFERENCES

Dr. Bastian Rieck

Principal Investigator, HELMHOLTZ MUNICH

@ bastian@rieck.me

☎ +49 176 21196318

Dr. Richard Anantua

Post Doctoral Fellow, HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS

@ 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

☎ 1 (714) 262-0171