

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
📍 München 📞 +49 152 2716 2240 🇺🇸 U.S. Citizen

📄 HONORS AND AWARDS

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- 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. <p>Sepsis Urology Deep Learning Python R Computational Topology Persistent Homology</p> |
| 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. <p>Python R Machine Learning Care Coordination Improving Quality of Care</p> |
| 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. <p>Amazon Cloud Computing AWS EC2 Development C++ Verilog FPGAs Hardware Blockchain</p> |
| 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. <p>TensorFlow SAP python jupyter notebooks pandas</p> |

📄 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. <p>Applied Category Theory Social Choice Theory Strategic Voting</p> |
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<p>December 2018 May 2018</p>	<p>SURF RESEARCH FELLOW, advised by Dr. Richard Anantua , UC Berkeley</p> <ul style="list-style-type: none"> > Built C++/Python pipeline from scratch to generate theoretical images by observing GRMHD simulations using different radiative processes. > Galaxies Publication : Emission Modeling in the EHT-ngEHT Age. <p> General Relativity Magento-Hydrodynamics Quantum Field Theory Radiative Processes Python C++ </p>
<p>December 2019 April 2018</p>	<p>UNDERGRADUATE RESEARCHER AND TELESCOPE OPERATOR, Alexei Filippenko Lab UC Berkeley and Lick Observatory</p> <ul style="list-style-type: none"> > Gather observational astronomy data using KAIT and Nickel telescopes. > 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. <p> Supernovae Dectection Image Analysis Observational Astronomy Spectra Analysis </p>

EDUCATION

<p>Present August 2022</p>	<p>HELENA GRADUATE SCHOOL, Helmholtz Munich and CIT, Technical University of Munich (TUM)</p> <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.
<p>May 2022 September 2020</p>	<p>SCHMID COLLEGE OF SCIENCE AND TECHNOLOGY, Chapman University</p> <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>
<p>December 2019 August 2015</p>	<p>UNIVERSITY OF CALIFORNIA, Berkeley</p> <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, INTERESTS, & HOBBIES

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

“ 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 UNIVERISTY

@ moshier@chapman.edu
☎ 1 (714) 997-6628

Dr. Louis Ehwerhemuepha

Researcher, CHILDREN'S HOSPITAL OF ORANGE COUNTY

@ lehwerhemuepha@choc.org
☎ 1 (714) 262-0171