

# JEREMY DON WAYLAND

## PhD Candidate | Research Scientist

🌐 [jeremy-wayland.me](http://jeremy-wayland.me)   [in linkedin.com/in/jeremy-wayland](https://www.linkedin.com/in/jeremy-wayland)  
🐙 [github.com/jeremy-wayland](https://github.com/jeremy-wayland)   [github.com/aidos-lab](https://github.com/aidos-lab)  
✉ [jeremy.don.wayland@gmail.com](mailto: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

Present August 2022	<b>DOCTORAL RESEARCHER, AIDOS Lab, Helmholtz Munich</b> <ul style="list-style-type: none"><li>&gt; Doctoral Candidate working at the Institute of AI for Health.</li><li>&gt; Supervisor : <b>Dr. Bastian Rieck</b>.</li><li>&gt; <b>NeurIPS 2023 Publication</b> : Curvature Filtrations for Graph Generative Model Evaluation</li></ul> <p><a href="#">topological and geometric deep learning</a>   <a href="#">graph learning and discrete curvature</a> <a href="#">manifold learning and dimensionality reduction</a>   <a href="#">diffusion modeling</a> <a href="#">topological data analysis for healthcare and environmental science</a></p>
June 2022 July 2021	<b>GRANT FUNDED RESEARCH COMPUTATIONAL SCIENTIST, Children's Hospital of Orange County, Orange CA</b> <ul style="list-style-type: none"><li>&gt; Predicting onset of sepsis for ED patients using machine learning and artificial intelligence.</li><li>&gt; 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.</li></ul> <p><a href="#">Sepsis</a>   <a href="#">Urology</a>   <a href="#">Deep Learning</a>   <a href="#">Python</a>   <a href="#">R</a>   <a href="#">Computational Topology</a>   <a href="#">Persistent Homology</a></p>
December 2021 January 2020	<b>SOFTWARE/RESEARCH DEVELOPER (PART TIME), Encryptek LLC, Lake Forest CA</b> <ul style="list-style-type: none"><li>&gt; Deploying Radium product-line onto Amazon's Cloud Marketplace via AWS FPGA development.</li><li>&gt; Cryptography and Cryptocurrency market research.</li><li>&gt; Hardware resales.</li></ul> <p><a href="#">Amazon Cloud Computing</a>   <a href="#">AWS EC2 Development</a>   <a href="#">C++</a>   <a href="#">Verilog</a>   <a href="#">FPGAs</a>   <a href="#">Hardware</a>   <a href="#">Blockchain</a></p>
April 2020 February 2020	<b>Machine Learning, INDEPENDENT CONSULTANT, Lake Forest CA</b> <i>Madiba LLC : SAP SOFTWARE CONSULTING</i> <ul style="list-style-type: none"><li>&gt; Incorporated predictive analytics using open source tools in tandem with in house SAP tools to compare performance and flexibility of different machine learning packages.</li><li>&gt; Built TensorFlow models to analyze multivariate irregular time series data.</li></ul> <p><a href="#">TensorFlow</a>   <a href="#">SAP</a>   <a href="#">python</a>   <a href="#">jupyter notebooks</a>   <a href="#">pandas</a></p>

## 📖 RESEARCH EXPERIENCE

December 2019 April 2019	<b>SENIOR HONORS THESIS, advised by Dr. Wesley Holliday , UC Berkeley Department of Mathematics</b> <ul style="list-style-type: none"><li>&gt; <i>An Investigation into Strategic Voting and the Commutative Monoidal Structure of Elections</i></li><li>&gt; Characterization of specific uncertainty sets in regards to prevalent strategic voting situations.</li><li>&gt; Novel application of Category to describe electoral structure.</li></ul> <p><a href="#">Applied Category Theory</a>   <a href="#">Social Choice Theory</a>   <a href="#">Strategic Voting</a></p>
December 2018 May 2018	<b>SURF RESEARCH FELLOW, advised by Dr. Richard Anantua , UC Berkeley</b> <ul style="list-style-type: none"><li>&gt; Built C++/Python pipeline from scratch to generate theoretical images by observing GRMHD simulations using different radiative processes.</li><li>&gt; <b>Galaxies Publication</b> : Emission Modeling in the EHT-ngEHT Age.</li></ul> <p><a href="#">General Relativity</a>   <a href="#">Magento-Hydrodynamics</a>   <a href="#">Quantum Field Theory</a>   <a href="#">Radiative Processes</a>   <a href="#">Python</a>   <a href="#">C++</a></p>

December 2019 | **UNDERGRADUATE RESEARCHER AND TELESCOPE OPERATOR, Alexei Filippenko Lab UC Berkeley and Lick Observatory**

April 2018 |
 

- > 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.

Supernovae Dectection | Image Analysis | Observational Astronomy | Spectra Analysis

## EDUCATION

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

August 2022 |
 

- > 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 | **SCHMID COLLEGE OF SCIENCE AND TECHNOLOGY, Chapman University**

September 2020 |
 

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

December 2019 | **UNIVERSITY OF CALIFORNIA, Berkeley**

August 2015 |
 

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

## TEACHING EXPERIENCE

Chapman University | **GRADUATE TEACHING ASSISTANT,**

- > **Physics Lab Instructor** : Undergraduate Mechanics course.(Fall 2021, Spring 2021, 2022)
- > **Mathematics Instructor** : Undergraduate precalculus course. (Fall 2020)

UC Berkeley | **UNDERGRADUATE STUDENT INSTRUCTOR, Berkeley**

- > **Astronomy instructor** : Introduction to astronomy/astrophysics course taught by Dr. Alex Filippenko.(Fall 2019)

## PROGRAMMING LANGUAGES

Python ●●●●●

LateX ●●●●●

C++ ●●●●○

Julia ●●●○○

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. Louis Ehwerhemuepha**  
*Manager, Computational Research, CHILDREN'S HOSPITAL OF ORANGE COUNTY*  
 @ lehwerhemuepha@choc.org  
 ☎ 1 (714) 262-0171