Yannik Glaser

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Yannik Glaser | Nick-AI

Honolulu, HI 96816

References available upon request

Objective

Working on science problems using machine learning. Seeking a challenging position where I can leverage my expertise in machine learning, self-supervised learning, and collaborative problem solving to do innovative work in fields such as medical imaging, remote sensing, climate science, and physics.

Experience

- **University of Hawai'i at Mānoa[]** *January 2019 - Present*
  Graduate Research Assistant Honolulu, HI
  - **Solar atmosphere inversion**: Utilized deep learning to solve inverse solar physics problem. Training models on over 100TB of simulation data. Model to be deployed in Daniel K. Inouye Solar Telescope workflow.
  - **Open ocean SAR satellite foundation model**: Used self-supervised representation learning to train a foundation model for SAR WV mode. Applied model to retrospectively analyze 9 years of global-coverage data.
  - **Imaging-derived mortality marker from dual energy X-ray absorptiometry**: Consolidated multiple longitudinal NIH studies with different imaging views to train a self-supervised DXA vision model and derived a multi-modal mortality marker based on body composition information in tabular fitness markers.
  - **Physics-informed particle identification model**: Designed neural network architecture based on known physics principles for Belle II detector Kaon/ Pion particle identification.
- **University of Hawai'i at Mānoa[]** *September 2018 - December 2018*
  Graduate Teaching Assistant Honolulu, HI
  - **Introductory computer science teaching assistant**: Assisted professor with preparing lectures, structuring coursework, and grading. Taught lab sections for 60+ students and provided individualized feedback and tutoring.
- **Mind-Alliance Systems []** *May 2018 - August 2018*
  Software Engineering Intern Remote
  - **NLP application development and graph database prototyping**: Developed prototype to scrape event information. Composed initial dataset scraping schema.org information to refine a named-entity-recognition model. Explored graph database implementations to store data.
- **SAP Labs, Inc. []** *May 2017 - August 2017*
  Software Engineering Intern Palo Alto, CA
  - **Conversational AI platform development**: Performed exploratory work on expanding English conversational AI models to German. Improved baseline model by 20% through use of custom word embeddings and moving to a RNN-based model.
- **University of North Georgia []** *October 2016 - May 2018*
  Computer Science Head Tutor Dahlonega, GA
  - **Leading CS department tutoring program**: Senior tutor for Dahlonega campus computer science department. Oversaw department of 100+ students, set and created schedules, and tutored for a curriculum of 15+ courses.

Education

- **University of Hawai'i at Mānoa** *August 2020 - May 2025 (expected)*
  Ph.D. in Computer Science Honolulu, HI
  - GPA: 4.00/4.00
  - Advisor: Peter Sadowski
- **University of Hawai'i at Mānoa** *August 2018 - May 2020*
  M.S. in Computer Science Honolulu, HI
  - GPA: 3.88/4.00
- **University of North Georgia** *August 2015 - May 2018*
  B.S. in Computer Science Dahlonega, GA
  - GPA: 3.97/4.00

Peer-reviewed Publications and Presentations

[2024.1] Kai E Yang, Lucas A Tarr, Matthias Rempel, S Curt Dodds, Sarah A Jaeggli, Peter Sadowski, Thomas A Schad, Ian Cunnyngham, Jiayi Liu, **Yannik Glaser**, et. al (2024). **Spectropolarimetric Inversion in Four Dimensions with Deep Learning (SPIn4D). I. Overview, Magnetohydrodynamic Modeling, and Stokes Profile Synthesis**. In *The Astrophysical Journal*

[2024.2] Arianna Bunnell, Dustin Valdez, Fredrik Strand, **Yannik Glaser**, et. al (2024). **Artificial Intelligence-Informed Handheld Breast Ultrasound for Screening: A Systematic Review of Diagnostic Test Accuracy**. In *Radiology* (Accepted for publication)

[2024.3] Arianna Bunnell, **Yannik Glaser**, et. al (2024). **Learning a Clinically-Relevant Concept Bottleneck for Lesion Detection in Breast Ultrasound**. In *International Conference on Medical Image Computing and Computer-Assisted Intervention*

[2024.4] Lambert T Leong, Michael C Wong, Yong E Liu, **Yannik Glaser**, et. al (2024). **Generative deep learning furthers the understanding of local distributions of fat and muscle on body shape and health using 3D surface scans**. In *Nature Communications Medicine*

[2023.1] **Yannik Glaser**, et. al (2023). **WVNet: A SAR Wave-mode Foundation Model**. In *American Geophysical Union Annual Meeting*

[2023.2] Kai E Yang, Xudong Sun, Lucas A Tarr, Matthias Rempel, S Curt Dodds, Sarah A Jaeggli, Peter Sadowski, Thomas A Schad, **Yannik Glaser**, et. al (2023).**Spectropolarimetric Inversion in Four Dimensions with Deep Learning (SpIN4D): Magnetohydrodynamic Modeling and Forward Synthesis Pipeline**. In *American Geophysical Union Annual Meeting*

[2023.2] Yusuke Hatanaka, **Yannik Glaser**, et. al (2023). **Diffusion models for high-resolution solar forecasts**. *arXiv preprint*

[2022.1] **Yannik Glaser**, et. al (2022). **Deep learning predicts all-cause mortality from longitudinal total-body DXA imaging**. In *Nature Communications Medicine*

[2022.2] **Yannik Glaser**, et. al (2022).**Self-supervised detection of atmospheric phenomena from remotely sensed synthetic aperture radar imagery**. In *NeurIPS Machine Learning and the Physical Sciences Workshop*

[2022.3] Vânia Filipa Lima Fernandes, **Yannik Glaser**, et. al (2022). **Evolution of left–right asymmetry in the sensory system and foraging behavior during adaptation to food-sparse cave environments**. In *BMC Biology*

[2021.1] **Yannik Glaser**, et. al (2021). **Deep learning identifies body composition changes over time in total-body DXA imaging to predict all-cause mortality**. In *The Radiological Society of North America scientific assembly and annual meeting*

[2021.2] Michael Ito, **Yannik Glaser**, et. al (2021). **Evolution-Informed Neural Networks for Microbiome Data Analysis**. In *IEEE International Conference on Bioinformatics and Biomedicine*

[2020.1] **Yannik Glaser**, et. al (2020). **Hip fracture risk modeling using DXA and deep learning**. In *Medical Imaging Meets NeurIPS Workshop*

[2020.2] **Yannik Glaser**, et. al (2020). **Particle identification in the Belle II detector using deep learning**. In *AAAI 2020 Fall Symposium on Physics-guided AI to Accelerate Scientific Discovery*

[2020.3] Brandon Quach, **Yannik Glaser**, et. al (2020). **Deep learning for predicting significant wave height from synthetic aperture radar**. In *IEEE Transactions on Geoscience and Remote Sensing*

[2019.1] Robert Beck, Peter Sadowski, **Yannik Glaser**, et. al (2019). **Refined redshift regression in cosmology with graph convolution networks**. In *NeurIPS Machine Learning and the Physical Sciences Workshop*

Leadership and Extracurriculars

- **HIDSI Research Fellow** — *August 2019 - May 2020*
  Hawaii Data Science Institute [🌐]
- **President for Habitat for Humanity University Chapter** — *August 2016 - May 2018*
  University of North Georgia [🌐]
- **Member of NCAA-funded Lead-By-Choice Taskforce** — *August 2017 - May 2018*
  University of North Georgia [🌐]
- **MCCB Cottrell Scholar** — *August 2017 - May 2018*
  Mike Cottrell College of Business, University of North Georgia [🌐]
- **Member Code Hawks (competitive programming team)** — *August 2016 - May 2018*
  University of North Georgia

Additional Information

Languages: German (Native Speaker), English (Native-level fluency)