ANDREW JORDAN VITA PRINSTER (DREW)
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EDUCATION

Johns Hopkins University Baltimore, MD
Ph.D. student in Computer Science – *Advisors: Suchi Saria & Anqi Liu* 2021 – present
Malone Center for Engineering in Healthcare & Mathematical Institute for Data Science (MINDS)

Johns Hopkins University Baltimore, MD
MSE in Computer Science – *Advisors: Suchi Saria & Anqi Liu* 2021 – 2023

Yale University New Haven, CT
B.S. Computer Science and Mathematics – *Research Advisors: Nicholas Christakis & Mark Gerstein* 2017 – 2021
Graduated with Distinction in the Major; Yale Global Health Scholar

PAPERS (PEER-REVIEWED)

CONFERENCE ARTICLES

[1] **Prinster, D.***, Stanton, S.*, Liu, A., & Saria, S. "Conformal Validity Guarantees Exist for Any Data Distribution (and How to Find Them)." *The International Conference on Machine Learning* (ICML)*,* 2024.

[2] **Prinster, D.**, Liu, A., & Saria, S. "JAWS-X: Addressing Efficiency Bottlenecks of Conformal Prediction Under Standard and Feedback Covariate Shift", **Oral (top 2% submission)** at *The International Conference on Machine Learning* (ICML)*,* 2023.

[3] **Prinster, D.**, Liu, A., & Saria, S. "Efficient Approximate Predictive Inference Under Feedback Covariate Shift with Influence Functions", Extended abstract in *Conformal and Probabilistic Prediction with Applications* (COPA), 2023.

[4] **Prinster, D.**, Liu, A., & Saria, S. "JAWS: Auditing Predictive Uncertainty Under Covariate Shift." *Advances in Neural Information Processing Systems* (NeurIPS)*,* 2022.

JOURNAL ARTICLES

[5] Beghini, F., Pullman, J., Alexander, M. Vishnempet Shridhar, S., **Prinster, D.**, ..., Brito, I., & Christakis, N. "Gut Microbiome Strain-Sharing Within Isolated Village Social Networks", *Nature*, 2024.

[6] **Prinster, D.***, Mahmood, A.*, Saria, S., Jeudy, J., Lin, C.H., Yi, P., & Huang, C.M. "Care to Explain? AI Explanation Types Differentially Impact Chest Radiograph Diagnostic Performance and Physician Trust in AI", *Radiology*, 2024.

[7] **Prinster, D.**, Resasco, J., & Nufio, C. "Weather variation affects the dispersal of grasshoppers beyond their elevational ranges", in *Ecology and Evolution*, 2020.

[8] **Prinster, D.**, Hoskins., & Strode, P. "Pitfall traps & diversity indices: Using quantitative reasoning to test edge effect theory." *The American Biology Teacher*, 2019.

IN REVIEW

[9] **Prinster, D.**, Alexander, M., & Christakis, A. "Exact Sequence Variants Analysis of Human Gut Microbiome and Personality Traits Conditional on Host Genetics," In "revise and resubmit" at *Nature Communications Biology*.

AWARDS & FELLOWSHIPS

- Amazon Institute for Interactive AI (AI2AI) PhD Fellowship 2024-25 2024
- Johns Hopkins Mathematical Institute for Data Science (MINDS) Spring Fellowship 2024
- Heinrich von Staden Cup, Ezra Stiles College at Yale University 2021
  "to a senior who most consistently challenged the social and intellectual conscience of the College."
- National Science Foundation Graduate Research Fellowship Program (NSF GRFP) Honorable Mention 2021
- Yale College Dean's Summer Research Fellowship 2020
- Ezra Stiles (Yale residential college) John E. Linck & Alanne Headland Linck Fellowship 2020, 2019, 2018
- Ezra Stiles (Yale residential college) Gary Stein Fellowship 2020, 2019, 2018
- Ezra Stiles (Yale residential college) Richter Fellowship 2019
- Unite For Sight Volunteer of the Year 2019
- Yale College Howard W. Hilgendorf Memorial Fellowship 2018

INVITED TALKS

- Conformal Validity Guarantees Exist for Any Data Distribution (and How to Find Them)   Oct. 2024
  Lindemann Lab, University of Southern California (USC)

- Conformal Validity Guarantees Exist for Any Data Distribution (and How to Find Them)   Oct. 2024
  (Invited Poster) Mathematics of Trustworthy Machine Learning Workshop, SIAM Mathematics of Data Science (MDS24)

- Conformal Validity Guarantees Exist for Any Data Distribution (and How to Find Them)   Sep. 2024
  Amsterdam Machine Learning Lab (AMLab) Seminar

- Extending Conformal Prediction to AI Agents   Aug. 2024
  Active Learning Reading Group, Johns Hopkins University Applied Physics Laboratory (APL)

FACULTY GRANT & BOOK CONTRIBUTIONS

- Proposal Contributor: AI monitoring component of ARPA-H grant proposal (PI: Dr. Saria).   2024 – present
- Proposal Contributor: Gordon and Betty Moore Foundation grant (>$700K awarded to PI: Dr. Saria).   2023 – 2024
- Proposal Contributor: U.S. Food and Drug Administration (FDA) CERSI grant proposal (PI: Dr. Saria).   2022 – 2024
- Proposal Contributor: Templeton Foundation grant (>$1.3M awarded to PI: Dr. Christakis).   2020
- Book Contributor: *Apollo's Arrow*, book on COVID-19 pandemic by Dr. Christakis.   2020

SERVICE & TEACHING

REVIEWING

- NeurIPS Workshop on Statistical Frontiers in LLMs and Foundation Models **(Program Committee)**   2024
- Conference on Uncertainty in Artificial Intelligence (UAI)   2024
- Machine Learning for Health (ML4H) Symposium **(Outstanding Reviewer)**   2022, 2023
- ICML Workshop on Spurious Correlations, Invariance and Stability   2023
- Conference on Information Sciences and Systems (CISS)   2023

TEACHING

- **Teaching Assistant** at Johns Hopkins University   Spring 2023
  Advanced Machine Learning: ML for Trustworthy AI (with Professor Anqi Liu)

- **Teaching Assistant** at Yale University   Fall 2019
  First-Year Organic Chemistry (with Professor Timothy Newhouse)

ACADEMIC OUTREACH & DEPARTMENT SERVICE

- **Orientation and Recruitment Chair** for Johns Hopkins Computer Science PhD Council   2022 – present
- **Organizer & Group Leader:** Mini workshop on Trustworthy AI, NeurIPS 2022 High School Outreach Program   2022
- **PhD Application Mentor** with Johns Hopkins CLSP   2022

PUBLIC HEALTH VOLUNTEERING

- **Global Impact Fellow** with Unite For Sight (UFS) in Honduras (leading global health non-profit)
  Volunteer & Researcher: ZOE Eye Clinic (UFS Honduras partner) for ~30 outreach trips over 8 weeks.   Summer 2018
  Yale Campus Representative (top 2% of UFS alumni).   2018 – 2021

- **Volunteer:** HAVEN Free Clinic Social Services Department   2017 – 2019
  Assisted uninsured residents with health-related social/financial needs, e.g. medical debt relief, Medicaid application.

FURTHER RESEARCH EXPERIENCE

- Johns Hopkins University – *Advisors: Dr. Suchi Saria & Dr. Anqi Liu*   Baltimore, MD
  Topic: Methods for Reliable and Regulatable AI [1] [2] [3] [4]   2021 – present

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- Johns Hopkins University – *Supervisors: Dr. Chien-Ming Huang & Dr. Suchi Saria* Baltimore, MD
  Topic: Human-AI Teaming in Healthcare [6] 2021 – 2024

- Yale University – *Supervisor: Dr. Nicholas Christakis* New Haven, CT
  Topic: Microbiome, Social Networks, and Mental Health in Honduras [5] [9] 2019 – 2022

- Yale University – *Supervisor: Dr. Mark Gerstein* New Haven, CT
  Topic: Statistical Testing of Metagenome Alignments (senior thesis) 2020 – 2021

- Unite For Sight, Honduras – (Principal Investigator) *Collaborators: ZOE Eye Clinic* Tegucigalpa, Honduras
  Topic: Perceptions of Cataract Surgery in Diagnosed Outreach Patients (service-oriented research) 2018 – 2021

- CU Boulder Entomology Dept. – *Supervisors: Dr. César Nufio, Dr. Paul Strode* Boulder, CO
  Topic: Effects of Climate Change on Local Ecology [7] [8] 2014 – 2020

- CU Boulder Chemistry & Biochemistry Dept. – *Supervisor: Dr. Dylan Taatjes* Boulder, CO
  Topic: Effect of Activators on Transcription of Human HSP70 mRNA (senior thesis) Summers, 2015 & 2016

INTERESTS & SKILLS

Interests: Lifetime soccer player, runner, hiker, skier and snowboarder. Enjoys good books, drawing and painting, board games, meaningful conversations and experiences with friends and family, and reflection.

Skills: *Language:* Spanish, advanced *Computer:* Python, R, C/C++, Java, JavaScript, HTML