

# Anastasios N. Angelopoulos

Statistics for reliable machine learning and computer vision,  
with applications to medical and computational imaging.

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## EDUCATION

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**University of California, Berkeley** Ph.D., Electrical Engineering & Computer Science  
GPA: 4.00/4.00, Advisors: Michael I. Jordan, Jitendra Malik 2019–Current

**Stanford University** B.S., Electrical Engineering  
GPA: 4.00/4.00, Advisors: Stephen Boyd, Gordon Wetzstein 2016–2019

## PUBLICATIONS

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- [1] **A. N. Angelopoulos**, S. Bates, L. Lei, J. Malik, and M. I. Jordan, “Distribution-Free, Risk-Controlling Prediction Sets”, *arXiv preprint arXiv:2101.02703*, 2021.
- [2] **A. N. Angelopoulos**, S. Bates, J. Malik, and M. I. Jordan, “Uncertainty Sets for Image Classifiers using Conformal Prediction”, *International Conference on Learning Representations*, 2021, [Spotlight oral](#).
- [3] **A. N. Angelopoulos**, S. Bates, T. Zrnic, and M. I. Jordan, “Private Prediction Sets”, *arXiv preprint arXiv:2102.06202*, 2021.
- [4] **A. N. Angelopoulos**, A. Kohli, S. You, and L. Waller, “Shift-Variant Deblurring for Rotationally Symmetric Systems”, *Computational Optical Sensing and Imaging, Optical Society of America*, 2021.
- [5] **A. N. Angelopoulos**, J. N. Martel, A. P. Kohli, J. Conradt, and G. Wetzstein, “Event-Based, Near-Eye Gaze Tracking Beyond 10,000Hz”, *IEEE Transactions on Visualization and Computer Graphics (to appear)*, 2021, [Oral at IEEEVR conference and TVCG special issue](#).
- [6] **A. N. Angelopoulos**, R. Pathak, R. Varma, and M. I. Jordan, “On Identifying and Mitigating Bias in the Estimation of the COVID-19 Case Fatality Rate”, *Harvard Data Science Review*, Special Issue 1 2020.
- [7] R. Konrad, **A. N. Angelopoulos**, and G. Wetzstein, “Gaze-Contingent Ocular Parallax Rendering for Virtual Reality”, *ACM Transactions on Graphics (TOG)*, vol. 39, no. 2, pp. 1–12, 2020.
- [8] **A. N. Angelopoulos**, H. Ameri, D. Mitra, and M. Humayun, “Enhanced Depth Navigation Through Augmented Reality Depth Mapping in Patients with Low Vision”, *Scientific Reports, Nature Publishing Group*, vol. 9, no. 1, pp. 1–10, 2019.
- [9] **A. N. Angelopoulos**, *Universal Pickup*, US Patent 8,993,868, Mar. 2015.

## SCHOLARSHIPS AND AWARDS

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|---|-----------|
| 1. NSF Graduate Research Fellowship                               | 2021–2024 |
| 2. Berkeley Fellowship  | 2019–2021 |
| 3. Frederick Emmons Terman Award (Top 30 at Stanford)             | 2019      |
| 4. Phi Beta Kappa   | 2019      |
| 5. Tau Beta Pi  | 2019      |
| 6. Departmental Distinction in Electrical Engineering             | 2019      |
| 7. National Merit Scholar   | 2016–2019 |
| 8. US National Debate Champion, Member of US National Debate Team | 2013–2016 |

## INDUSTRY EXPERIENCE

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### MHR Vision

Los Angeles, CA

Founder, with [Ming Hsieh](#), [Mark Humayun](#), and [Rohit Varma](#)

2018-today

- Diagnosing people’s eyeglass prescriptions from a smartphone.
- Myopia currently afflicts 1.9 billion people; this number will double in the next twenty years. Not enough optometrists are being trained to keep up with the demand, particularly in populous nations like China and India, creating a need an automated screening and diagnostic tool in those markets. MHR Vision has built an app that has redesigned standard optometric tests using computer vision to work on a smartphone, and validated these tests in a several hundred-person clinical trial over two clinical sites in Los Angeles. I led a nine-person technical team towards the software development and clinical experimentation for this product.

### International Space Station + USC

Los Angeles, CA

Co-Investigator

November 2018-Summer 2020

- This project investigated why astronauts go blind in space by sending mice to the ISS as an animal model and examining their eye, brain, and middle ear after months of micro-gravity exposure.
- The mice were successfully sent to space, euthanized, frozen, and returned. However the sample analysis has been delayed by a combination of the COVID-19 pandemic and spaceflight-related issues you can read about in the national news [here](#). I led the grant and scientific plan for this project which will soon resume.

### Hypernet Labs

Palo Alto, CA

Second Engineer

2017-2018

- Buy, sell, and use compute from anywhere.
- Hypernet Labs built a blockchain technology for dynamically buying and selling compute. I was their second engineering hire, and built their early network tunneling codebase.

### Golden Eye Bionics

Pasadena, CA

Software Engineer

Summer 2018

- Software engineering for prosthetic retina.
- Golden Eye Bionics is a startup developing a high-resolution prosthetic retina—a 16x16 array of electrodes that can be surgically attached to the optic nerve and restore vision to the blind. I worked on software to model the patient’s vision after implantation, including the size and shape of the visual percepts generated by electrodes, and algorithms to process video and improve the patient’s VA and functional vision.

### Camtek

Pasadena, CA

MEMS Engineer

Summer 2018

- Manufacturing intra-ocular eye pumps.
- I manufactured parylene intra-ocular eye pumps using industrial tools like photolithography and polymer deposition. I also built a system that automatically identifies manufacturing errors in the pumps using computer vision and a camera-enabled microscope.

## SERVICE

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1. **Organizer** of ICML Workshop on Distribution-Free Uncertainty Quantification 2021
2. **Reviewer** for the Harvard Data Science Review, ICML, PLOS One, SIGGRAPH 2021, and Scientific Reports

## TALKS

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1. Distribution-Free Risk-Controlling Prediction Sets, Berkeley ML-MRI Seminar, 2021
2. Distribution-Free Risk-Controlling Prediction Sets, MIT CSAIL CSL Seminar, 2021  
<https://www.youtube.com/watch?v=z8WDmD5D-I0>

3. Distribution-Free Risk-Controlling Prediction Sets, EPFL ML and Vision Reading Group, 2021
4. Uncertainty Sets for Image Classifiers using Conformal Prediction, ICLR 2021 Spotlight Oral, 2021
5. Event-Based Near-Eye Gaze Tracking Beyond 10KHz, IEEEVR 2021 Oral Presentation, 2021  
<https://www.youtube.com/watch?v=qc0f9pFiS2s>
6. Uncertainty Sets for Image Classifiers using Conformal Prediction, BAIR Retreat, 2021
7. Private Prediction Sets, John Duchi Group Meeting (Stanford), 2021
8. Distribution-Free Risk-Controlling Prediction Sets, Deborah Marks Lab (Harvard Medical School), 2021
9. Distribution-Free Risk-Controlling Prediction Sets, Stanford Partnership in AI-Assisted Care (Stanford Medical School with Fei-Fei Li), 2021
10. Distribution-Free Risk-Controlling Prediction Sets, Stanford Information Theory Forum, 2021,  
<https://www.youtube.com/watch?v=ITJAR3fcNuI>
11. Distribution-Free Risk-Controlling Prediction Sets, USC ECE Department Seminar, 2021
12. Distribution-Free Risk-Controlling Prediction Sets, Sharon Li group (UW Madison), 2021
13. Distribution-Free Risk-Controlling Prediction Sets, Weissman group (Stanford), 2021
14. Uncertainty Sets for Image Classifiers using Conformal Prediction, RISE Poster Session, 2021
15. Uncertainty Sets for Image Classifiers using Conformal Prediction, CS329S: Model Evaluation, 2021
16. Distribution-Free Risk-Controlling Prediction Sets, Darrell group (Berkeley), 2021
17. Distribution-Free Risk-Controlling Prediction Sets, SMILELab (Northeastern), 2021
18. Distribution-Free Risk-Controlling Prediction Sets, Perona group meeting (Caltech), 2021
19. Distribution-Free Risk-Controlling Prediction Sets, Candes group meeting (Stanford), 2021
20. Uncertainty Sets for Image Classifiers using Conformal Prediction, RISE Retreat, 2020
21. Uncertainty Sets for Image Classifiers using Conformal Prediction, Berkeley AI Seminar, 2020,  
<https://www.youtube.com/watch?v=jW-mbsVgcIc>
22. Dark Data and COVID-19, Occidental College 'The Matrix' Speaker Series, 2020,  
<https://www.youtube.com/watch?t=171>
23. Augmented Reality Low Vision Aid, Berkeley AI Seminar, 2019
24. Event-Based Near-Eye Gaze Tracking Beyond 10KHz, Annual Stanford Center for Image Systems Engineering Industry Affiliates Meeting, 2019
25. Augmented Reality Low Vision Aid, USC Institute for Biomedical Therapeutics, 2018
26. Augmented Reality Low Vision Aid, Facebook/Stanford SystemX Alliance, 2018