

# YUEXING HAO

*CV Updated on 11/18/2024*

## Education

**IvyPlus Exchange Ph.D Scholar.** EECS, Massachusetts Institute of Technology 09/2024 to 05/2025  
Laboratory for Information & Decision Systems (LIDS)

**Ph.D.** Human-Centered Design, Cornell University 09/2022 to 12/2025  
Concentrations in AI, Patient-AI Collaboration, and Health Intelligence

**M.S.** Computer Science, Tufts University 09/2020 to 01/2022

**B.A.** Computer Science, Rutgers University-New Brunswick 09/2017 to 05/2020

## Publications

1. **Y. Hao**, S. Chen, A. Vashistha, C. Löckenhoff, W. Liu, L. Sun, S. Kalantari, M. Schaekermann, L.A. Celi, D.S. Bitterman, M. Ghassemi. Research through Evaluation (RtE): Rethinking Evaluation Methods After Designing Large Language Model-Based Applications for Health and Wellness. (*Workshop Under Review in CHI 25*)
2. **Y. Hao**, J. Holmes, J. Hobner, A. Bennett, D.K. Ebner, S. Kalantari, M. Waddle, W. Liu, M. Ghassemi. Research through Evaluation (RtE): A Case Study of Iterative Evaluation Methods for Large Language Model-Based In-basket Bot vs. Clinical Care Teams. arXiv. (Under Review in HCI Conference)
3. **Y. Hao**, J. Holmes, M. Waddle, N. Yu, K. Vickers, H. Preston, D. Margolin, C. Loeckenhoff, A. Vashistha, M. Ghassemi, S. Kalantari, W. Liu. Defining the Border for LLM Applications in Healthcare: Developing an Expert-in-the-Loop LLM-Powered Chatbot for Prostate Cancer Patients. arXiv <https://arxiv.org/abs/2409.19100>. (Under Review in HCI Conference)
4. **Y. Hao**, J. Holmes, J. Hobner, A. Bennett, D.K. Ebner, D.M. Routman, S. Shiraishi, S.H. Patel, N.Y. Yu, C.L. Hallemeier, B.E. Ball, M.R. Waddle, W. Liu. Retrospective Comparative Analysis of Prostate Cancer In-Basket Messages: Responses from Close-Domain LLMs vs. Human Care Teams. arXiv <https://arxiv.org/abs/2409.18290v1>. (Under Review in Mayo Journal Digital Medicine)
5. **Y. Hao \***, T. Yuan \*, Y. Yang \*, A. Gupta, M. Wieland, K. Birman, P. Basran. AI-Based Teat Shape and Skin Condition Prediction for Dairy Management. (Under Review in AI Conference)
6. **Y. Hao**, C. Löckenhoff, H. Lee, J. Zwerling, S. Kalantari. The i-SDM Framework: Developing AI-based Tools in Shared Decision-Making for Cancer Treatment with Clinical Professionals. *Companion of the 2024 Computer-Supported Cooperative Work and Social Computing (CSCW 24)*. <https://doi.org/10.1145/3678884.3681841>
7. **Y. Hao**. Outcome First or Overview First? Optimizing Patient-Oriented Framework for Evidence-Based Healthcare Treatment Selections with XAI Tools. *Companion of the 2024 Computer-Supported Cooperative Work*

\*Equal authorship

and Social Computing (CSCW 24'). <https://doi.org/10.1145/3678884.3681859>

8. **Y. Hao**, R. Ries, C. Papudesu, J. Ryoo, H. Lee, R. Ying, L. Sun. HUG Smart Sticker: Enhancing Personalized Intelligent Medication Management for Community-Dwelling Older Adults with an AIoT Intervention. (*Under Review*)
9. J. Feng, J. Liang, Z. Qiang, **Y. Hao**, X. Li, L. Li, Q. Chen, G. Liu, H. Wei. A hybrid stacked ensemble and Kernel SHAP-based model for intelligent cardiocography classification and interpretability. *BMC Med Inform Decis Mak* 23, 273 (2023). <https://doi.org/10.1186/s12911-023-02378-y>
10. A. Gupta \*, **Y. Hao** \*, Y. Yang \*, T. Yuan \*, M. Wieland, P. Basran, K. Birman. Digital Twin-Driven Teat Localization and Shape Identification for Dairy Cow. *Accepted to Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI-24) Student Poster Program*. <https://ojs.aaai.org/index.php/AAAI/article/view/30450>
11. **Y. Hao**, Z. Liu, B. Riter, S. Kalantari. Advancing Patient-Centered Shared Decision-Making with AI Systems for Older Adult Cancer Patients. *In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24), May 11--16, 2024, Honolulu, HI, USA*. <https://doi.org/10.1145/3613904.3642353>
12. **Y. Hao**, Z. Liu, M. Safford, R. Tamimi, S. Kalantari. An Exploratory Study of Shared Decision-Making (SDM) for Older Adult Patients with Chronic Diseases. *In Companion Publication of the 2023 Conference on Computer Supported Cooperative Work and Social Computing (CSCW '23 Companion). Association for Computing Machinery, New York, NY, USA, 12–16*. <https://doi.org/10.1145/3584931.3607023>
13. Y. Qian, **Y. Hao\***, K. Quan\*, S. Yang\*, Y. Zhao\*, V. Kuleshov, F. Wang. Harnessing Biomedical Literature to Calibrate Clinicians' Trust in AI Decision Support Systems. *In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23). Association for Computing Machinery, New York, NY, USA, Article 14, 1–14*. <https://doi.org/10.1145/3544548.3581393>
14. Y. Fei, F. Chen, L. He, J. Chen, **Y. Hao**, X. Li, G. Liu, Q. Chen, L. Li, H. Wei. Intelligent classification of antenatal cardiocography signals via multimodal bidirectional gated recurrent units. *Biomedical Signal Processing and Control, Volume 78, 2022, ISSN 1746-8094*, <https://doi.org/10.1016/j.bspc.2022.104008>.
15. **Y. Hao**, V. Bellotti. OOTOMS: Outcome-Oriented Techniques for User's Optimized Model Selections using Visualization Tools. *Workshop of Human-Centered Design of Symbiotic Hybrid Intelligence 2022*.
16. **Y. Hao**, M. Vaysiberg. Dynamic Strategies and Opponent Hands Estimation for Reinforcement Learning in Gin Rummy Game. *Intelligent Systems and Applications. IntelliSys 2021. Lecture Notes in Networks and Systems, vol 294. Springer, Cham*.
17. **Y. Hao**, G. Shafer. Models for Predicting Global Plastic Waste. *Rutgers University Research Journal (RURJ), Spring 2021*.
18. R. Cai, Z. Liang, B. Xu, Z. Li, **Y. Hao**, Y. Chen. TAG: Type Auxiliary Guiding for Comment Generation. *58th Association for Computational Linguistics (ACL), 2020*.
19. R. Cai, W. Di, X. Chen, **Y. Hao**. Dual-Dropout Graph Convolutional Network for Predicting Synthetic Lethality in Human Cancers. *Bioinformatics, btaa211, 2020*.

<https://digital-library.theiet.org/content/journals/10.1049/iet-ipr.2019.0716>

20. M. Wang, Y. Liang, L. Chen, **Y. Hao**, H. He, C. Li. Single Image Rain Removal with Reusing Original Input Squeeze-and-Excitation Network. *IET Image Processing*, 2020.

**Selected Awards and Fundings (All Awards)**

- ★ **Competitions**

2024 Association of Psychological Science (APS) Student Grant Competition (\$500)

2024 NCWIT Aspirations in Computing Collegiate Honorable Mention Award (\$2,500)

Second Prize of the [2023 IEEE ComSoc Student Competition](#) (\$1000)

The 2020 Interdisciplinary Contest in Modeling (ICM) Meritorious Winner
- ★ **Travel Awards**

2023 Cornell Institute for Healthy Futures (CIHF) Research Grant (\$500)

ACM SIGCHI 2023 Gary Marsden Travel Award (\$2200)

Microsoft sponsored Knowledge Discovery and Data Mining (KDD) Travel Grant (\$3000)
- ★ **Research Funds/Fellowship**

2024 Cornell University Departmental Thesis/Dissertation Research Grant (\$1200)

2023 Google CS Research Mentorship Program (CSRMP) Fellow

2023-24 OneReach.ai Academic Fellowship

Life Sciences Technology Innovation Fellowship (LSTIF)

Rutgers Aresty Research Center Undergraduate Research fellowship (\$500)
- ★ **Service Funds**

Cornell University Graduate and Professional Student Assembly Finance Commission Funding Fall 24', Spring 23' †, Summer 23' †, Fall 23'† (\$7700)

Cornell University Human Centered Design Department † (\$600)

Projects

University Internal Scholarship

External Scholarship

Industry Scholarship

LLM in Empowering Complex Treatment Decision-Making Process

09/2023 to Current

Mayo Clinics

– Ithaca, NY

❖ Rad Onc GPT involved NLP tasks (evaluated using metrics like BLEU, ROUGE, and accuracy) and computer vision (assessed using precision, recall, F1 score, and IoU), involving an application in Mayo Clinic's prostate cancer research.

❖ Explore LLM’s capability in potentially empowering minoritized, older adult cancer patients to make informed decisions and personalized education during cancer treatment process

❖ Utilize GPT 3.5 and 4 API to fine-tune and train the explain and engage LLM model

OneReach.ai Fellowship

Cornell Graduate School Fellowship

Cornell Thesis & Dissertation Grant

Patient-Centered Shared Decision-Making with AI Systems for Older Adult Cancer Patients

01/2023 to Current

## Cornell Design and Augmented Intelligence Lab (DAIL)

– Ithaca, NY

- ❖ Developed AI algorithms to analyze medication dosage patterns and make predictions. Employed SQL queries to extract and process users' medication dosage data and utilized AWS S3 for data storage and management, ensuring scalability and reliability.
- ❖ Designed an aging user-friendly interface for improved accessibility.
- ❖ Conducted a prototyping study and usability study with 25 older adult participants.

Alan D. Mathios Research & Service Grant

NCWIT AiC Collegiate Award

Cornell Graduate School Research Travel Grant

Cornell Institute for Health Future (CIHF) Conference Funding

Cornell Engaged Research Seed Grant

## AIoT-Based Patient-Centered Medication Management Intervention

04/2022 to Current

HUG Med.Inc

– Ithaca, NY

- ❖ Developed AI algorithms to analyze medication dosage patterns and make predictions. Employed SQL queries to extract and process users' medication dosage data and utilized AWS S3 for data storage and management, ensuring scalability and reliability.
- ❖ Designed an aging user-friendly interface for improved accessibility.
- ❖ Conducted a prototyping study and usability study with 25 older adult participants.
- ❖ Provision Patent (D10677) Pending through Cornell Technology Licensing (CTL).

IEEE ComSoc Second Prize

Human Spirit Fellowship

Tufts \$100k New Ventures Competition (Semi-Final)

IEEE Student Engineering Technology Challenge (1st Place)

MIT Sandbox Innovation Fund

## Digital Twin-Driven Platform for Dairy Cow Management

04/2022 to Current

Cornell Institute for Digital Agriculture (CIDA)

– Ithaca, NY

- ❖ Employed Machine Learning models (DINO, YOLO-F, and Faster R-CNN) to explore dairy teat localization and shape classification using a preliminary dataset of 348 images with 968 objects from 4 distinct classes.
- ❖ Built a Digital Twin-Driven platform for commercial dairy farm owners to smartly monitor the real-time barn sprinkler system to reduce water usage and improve barn management efficiency, employing computer vision techniques.

AAAI 24<sup>th</sup> Student Scholarship

DeLaval Data Collection Fund

## AI-Infused Literature-Based Clinical Decision Support System (CDSS)

03/2022 to 03/2023

Cornell Designing AI Lab

– Ithaca, NY

- ❖ Conducted 9 qualitative clinician interviews to understand the role of literature in clinical decision-making.
- ❖ Applied skills in JavaScript and CSS for front-end interface development.
- ❖ Explored innovative methods for enhancing explainable artificial intelligence (XAI) in CDSS.

ACM SIGCHI Gary Marsden Travel Award

## VitalMask Software

03/2022 to 08/2023

Vita Innovations.Inc

– Ithaca, NY

- ❖ Built a streamlined software platform using Python for nurses to view all patient data at a glance while actively tracking changes in patients' urgency of need through a priority scoring system.
- ❖ Provided continuous vital monitoring which will be used to re-prioritize patients as they wait in hospital waiting rooms, ultimately addressing the consequences of ED overcrowding.

## Pallia Care System

01/2021 to Current

Tufts University

– Boston, MA

- ❖ Built outcome-first and stage-first frameworks for users by reversing the traditional visual information mantra “Overview first, Details on demand.”
- ❖ Guided HCI design process of requirements analysis followed by iterative design and evaluation of prototypes.
- ❖ Visualized healthcare and medical data and classified patients’ information and designed a new data system that helps users find the best healthcare treatment option based on users personal needs.

Tufts Graduate Student Research Grant

Tufts Graduate Student Travel Fund

## Story Illustration - From Texts to Images

08/2019 to 05/2020

Rutgers Intelligent Visual Interfaces Lab (IVI lab)

– New Brunswick, NJ

- ❖ Assisted in research support of data processing operations for large survey research projects.
- ❖ Displayed visual story illustrations from the consequences of texts, by using machine learning languages in Python like PyTorch

Rutgers Aresty Research Fellowship

## Working History

### AI Research Intern

03/2024 to Current

Mayo Clinic Radiation Oncology Department

– Pheonix, AZ

### Ph.D. Research Fellow

03/2022 to Current

Cornell University

– Ithaca, NY

### Software Research Lead

03/2022 to 08/2023

Vita Innovations

– Ithaca, NY

### Data Scientist Intern

09/2021 to 01/2022

Keva Health

– Lexington, MA

### Graduate Teaching Assistant

09/2020 to 12/2021

Tufts Computer Science Department

– Medford, MA

### Journal of Big Data: Theory and Practice (JBDTP) Assistant Editor

05/2020 to 09/2020

New Jersey Big Data Alliance (NJBDA)

- Remote

## Selected Press

### ★ 2024

- Seniorish Daily, Using Machines to Cure Disease: AI Enhances Doctor-Patient Chats for Older Cancer Patients, [Seniorish](#)
- Gilbert + Tobin, Can AI empower patients? [gtlaw.com](https://www.gtlaw.com)

- Kristen Fischer, Report: AI tool could boost communication for older adults with cancer, [McKnight's Long-Term Care News](#).
- Emily Groff, AI may improve doctor-patient interactions for older adults with cancer, [Cornell Chronicle](#)
- Ananya Gambiraopet, Life Sciences Technology Innovation Fellowship announces 2023-24 cohort. [Cornell Chronicle](#)
- Entrepreneurship at Cornell 2023. W.E. Cornell Welcomes Fifth Cohort. [Eship.cornell](#)
- ★ **2023**
  - **Y. Hao**, Z. Liu, S. Tang, H. Zhao, G. Guo. Pending US provision patent through Cornell Center for Technology Licensing (CTL) - HUG Intelligent Medication Management System (docket number 10677).
  - CSCW 2023. Can Grandma Be Involved in Her Next Clinical Decision? [Medium.com](#)
  - Marisa LaFalce, Human connection and collaboration are common threads among CHI presentations, *Human Centered Design*
  - Frank Landymore, New AI Gives Doctors Advice on Patient's Ailments Like A Human Colleague, [futurism.com](#)
  - Patricia Waldron, AI tool gains doctors' trust by giving advice like a colleague, [Cornell Chronicle](#)
  - Cornell Graduate School, Eight Students Advancing to 3MT Finals, [Cornell Announcement](#)
- ★ **2022**
  - Haining Zheng, The 5th International Workshop on Artificial Intelligence of Things (AIoT) at KDD 2022, *LinkedIn Newsletter*
  - Laura Gallup, Teams take a crack at world food issues at digital ag hackathon, [Cornell Chronicle](#)
- ★ **2021**
  - Weatherhead Center, Disrupted Lives: Linking, De-linking and the Infrastructures of Recovery, [Harvard University](#)
  - Senior Exhibit, Story Illustration – From Texts to Images, *Rutgers Aresty Research Center*
  - Department News, Rutgers undergraduate receives "Meritorious Performance" award in Modeling contest, *Rutgers University School of Arts and Sciences*

## Invited Presentations

1. **Guest Lecture** at MIT LIDS & Stats Seminar. *Outlining the Borders for LLM Applications in Healthcare*. (Nov 2024) [link](#)
2. **Guest Lecture** at MIT CSAIL ML Tea Seminar. *Objective Approaches in a Subjective Medical World*. (Oct 2024) [link](#)
3. **Guest Lecture** at MIT AI for Society Retreat. *Objective Approaches in a Subjective Medical World*. (Sep 2024)
4. **Guest Lecture** at Particle Therapy Co-Operative Group (PTCOG) Thoracic Subcommittee Quarterly Meeting. *Retrospective Comparative Analysis of Prostate Cancer In-Basket Messages: Responses from Closed-Domain LLM vs. Clinical Teams*. (Sep 2024)
5. **Guest Lecture** at Weill Cornell Medicine Division of Geriatrics and Palliative Medicine, hosted by Dr. Cary Reid. *Objective Approaches in a Subjective Medical World*. (Sep 2024)
6. **[Best Presentation] Speaker** at 2024 Symposium on Artificial Intelligence in Veterinary Medicine (SAVY).



- AI-Based Cows' Teat Shape and Skin Condition Identification for Smart Dairy Farm*. Ithaca, NY. (April 2024)
7. **Keynote Speaker** at 2024 Greg Smith Palliative Care Summit, Hyde Park, NY. *Advancing Palliative Care with AI*. (Feb 2024)
  8. **Guest Speaker** at Google Computer Science Research Mentorship Program (CSRMP), remote. *Explain and Enhance: Patient-Centered Learning With LLM from the Public Online Health Forum*. (Dec 2023)
  9. **Guest Lecture** at Stanford University HCI Group Event, Stanford, CA. *AI Integration in Healthcare for Community-Dwelling Older Adults*. (Nov 2023)
  10. **Panelist** at Women Entrepreneurship (W.E.) Cornell Role Model Conversation (Sep 2023)
  11. **Guest Lecture** at Cornell Design User Experience with Technology Studio. *Improving College Students' Emotional Well-being through Virtual Environmental Problem-Solving Task: An Investigation of the Impact of Cognitive Style*. (Aug 2023)
  12. **Poster Presentation** for New York Academy of Sciences: The New Wave of AI in Healthcare. *AI-Enhanced Patient-Centered Clinical Shared Decision-Making (SDM): A "Black Box" Study with Older Adults*. (May 2023)
  13. **Speaker** for Women in Data Science (WiDS)-Stanford University Workshop. *Health Intelligence for Future - Building AI-Infused Clinical Decision Support Systems*. (Apr 2023)
  14. **Seminar Presentation** for Cornell College of Human Ecology. *Bridging Gaps between Innovation and Impact: Enhancing Usability of Assistive Technology for Older Adults*. (Apr 2023)
  15. **Guest Presentation** for Weill Cornell Payne Whitney Women's Program. *Health Intelligence for Future*. (Feb 2023)
  16. **Guest Lecture** for Columbia Nursing [Visualization Design Studio](#). *Health Intelligence for Future - Building AI-Infused Clinical Decision Support Systems*. (Dec, 2022)
  17. **Short Talk** on KDD AIoT Workshop. *Agriverse: Agriculture Metaverse* (Aug, 2022)
  18. **Guest Presentation** on ICML AI&Woman Event. *HamletEye: An AI-Powered Patient-Oriented Clinical Decision Framework Using Visualization Tools* (Jun, 2022)
  19. **Poster Presentation** for the 5th Annual Primary Care & Hospital Medicine Innovations Symposium at Cornell University. (Feb, 2022)
  20. **Poster Presentation** for the second annual Graduate Research Science and Technology Studies (Grists) at Harvard University. (Oct, 2021)
  21. **Poster Presentation** for Women in Data Science-Cambridge Initiative (Mar, 2021)

## Reviews

- ★ ACM (Association of Computing Machinery) 2024 Fairness, Accountability, and Transparency Conference (FAccT) Registration Co-Chair, Program Committee (PC) member
- ★ IEEE Transactions on Medical Imaging 2024 Paper Reviewer
- ★ IEEE VR 2024 Paper Reviewer
- ★ ACM CHI Conference on Human Factors in Computing Systems 2024 Late-Breaking Work (LBW) Area Chair, Paper Reviewer
- ★ IEEE VIS 2023 Alt.Vis Workshop Reviewer
- ★ ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW) 26th ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW) 2023 Paper Reviewer, Posters Associate Chair, 2024 Paper Associate Chair
- ★ AMIA 2023 Annual Symposium Abstract Reviewer

## Professional/Volunteer Services

### ❖ 2024

- Expanding Your Horizons (EYH) at Cornell 2024 Chair
- Sigma Xi Scientific Research Honor Society Member (ID: 20249990735)
- Graduate Women International (GWI)-America Member (ID: 77618603)
- Association for Women in Science (AWIS) Member (ID: 2092)

### ❖ 2023

- Graduate Women in Science (GWIS) Member
- IEEE Graduate Student Member (ID: 99480042)
- American Psychological Association (APA) Graduate Member (ID: C2304462639)
- [Colman Inclusive Leadership Program](#)
- Cornell University Human-Centered Design Graduate Student Association (HCD GSA) 2023-2024 President
- ACM Special Interest Group on Computer-Human Interaction (SIGCHI) Student Member (No. 2389305)
- Cornell Center for Health Equity (CCHEq) Member
- Society of Women Engineer (SWE) (ID: 2113201)

### ❖ 2022

- Volunteer of Cayuga Medical Center Outpatient Care Coordination (Fall 2022)
- Organizer of 2022 Cornell + Miller Knoll Innovation Challenge for *Future Healthcare Solutions*. (Nov, 2022) [Handbook](#)

## Mentorship

1. Peer Mentor for Cornell MAC (Multicultural Academic Council) 2023-24 Mentoring Program
2. Grace Hopper Celebration (GHC) 2023 Open Source Day Mentors
3. Kexin Quan (UCSD Electrical & Computer Engineering M.S., now IS PhD at UIUC, Summer 22')
4. Zeyu Liu (Cornell Human-Centered Design M.S., Fall 22', Spring 23')
5. Sabrina Tang (Cornell Human Development B.S., Fall 22')

## Teaching Experience

### Cornell University Teaching Assistant

DEA 2203: StudioSHIFT (Spring 2024);  
DEA 3030: Materials for Design and Sustainability (Spring 2024);  
DEA 3500: The Ambient Environment (Fall 2023);  
DEA 4025 - Design for Change: Imagining Decolonial Futures (Fall 2023);  
Policy Meets Design: High-Impact Facilities of the 21st Century (Fall 2022);  
Planning and Managing the Workplace: Evidence-Based Design (Fall 2022);  
Healthcare Innovations (Spring 2022)



**Tufts University Teaching Assistant**

Introduction to Machine Learning and Data Mining (Spring, Fall 2021)

Deep Neural Network (Fall 2020)

**Rutgers University Teaching Assistant**

Data 101 (Spring 2020)

Introduction to Computer and Application (Fall 2019, Summer 2020)