

ABHISHEK KARWANKAR

PERSONAL INFORMATION Graduate Research Assistant
Department of Computer & Information Sciences
University of Delaware

✉ karwabhi@udel.edu
🎓 [Google Scholar](#)
💻 [Personal website](#)

EDUCATION **University of Delaware** *Newark, DE*
Ph.D. in Computer and Information Sciences 2024 - Present
M.S. in Computer and Information Sciences 2022 - 2024
Advisor: Dr. Matthew Louis Mauriello

Pune Institute of Computer Technology *Pune, Maharashtra*
Bachelor of Engineering in Electronics and Telecommunication 2017 - 2021

RESEARCH INTERESTS

- **Human-Computer Interaction (HCI):** Designing user-centered systems that integrate interaction, visualization, and intelligent feedback for meaningful user engagement.
- **Accessible Technology Design:** Exploring design approaches that accommodate diverse user needs, including sensory and cognitive variation.
- **Interactive and Tangible Media Systems:** Developing physical-digital tools that support creative expression through multimodal interaction and real-time visual feedback.
- **Machine Learning and Data-Driven Interfaces:** Applying ML and visualization techniques to personalize experiences, surface insights, and guide user behavior across domains.

IN REVIEW — Three First Authored papers in Review at CHI 2026. Contact me for additional details.

REFERRED CONFERENCE PROCEEDINGS

C2. **Karwankar, A.**, Ruggiero, E., Lipkin, Z., Iyer, M. K., Brugel, S., Khatiwada, P., Stevens, D., & Mauriello, M. L. (2025). "uCue: An Interactive Musical Interface to Enhance Formative Listening Experiences for Children with ASD". In *Proceedings of the ACM Interaction Design and Children (IDC'25)*, June 23–26, 2025, Reykjavik, Iceland. ACM, New York, NY, USA, 18 pages.
[doi: 10.1145/3713043.3727053](https://doi.org/10.1145/3713043.3727053)

C1. Wang, Q., Erqsous, M., Khatiwada, P., **Karwankar, A.**, Alhassan, F. M., Chandrasekaran, A., Abraham, B., Lovell, F., Ngo, A. A., & Mauriello, M. L. (2025). "Leveraging Large Language Models for Review Classification and Rating Estimation of Mental Health Applications". In *Proceedings of the International AAAI Conference on Web and Social Media*, 19(1), 2017–2029.
[doi: 10.1609/icwsm.v19i1.35916](https://doi.org/10.1609/icwsm.v19i1.35916)

PATENTS P1. Mauriello, M., Stevens, D., Ruggiero, E., & **Karwankar, A.** (2025).
[U.S. Patent Application No. 19/201,395.](#)

CONFERENCE PRESENTATIONS	CP1. "uCue: An Interactive Musical Interface to Enhance Formative Listening Experiences for Children with ASD" at the ACM Interaction Design and Children (IDC) 2025 conference in Reykjavik, Iceland, June 23-26 2025.
POSTER PRESENTATIONS	<p>PP2. "uCue: An Interactive Musical Interface to Enhance Formative Listening Experiences for Children with ASD" at the UD AI4Health Day, University of Delaware, Jan 31, 2025.</p> <p>PP1. "Music for Autistic Listeners: A Music Theory Community Engagement Project." at the CIS 60th Anniversary Celebration, University of Delaware, May 4-5, 2024.</p>
PROTOTYPE DEMONSTRATIONS	<p>PD3. "Music for Autistic Listeners: A Music Theory Community Engagement Project." Artapalooza. Brennen School, Newark, DE, April 16, 2025.</p> <p>PD2. "Music for Autistic Listeners: A Music Theory Community Engagement Project." UD Inventors Recognition. University of Delaware, October 22, 2024.</p> <p>PD1. "Music for Autistic Listeners: A Music Theory Community Engagement Project." Artapalooza. Brennen School, Newark, DE, April 19, 2024.</p>
HONORS & AWARDS	<ul style="list-style-type: none"> • Nominated for the Sigma Xi: The Scientific Research Honors Society Membership, 2025 • Outstanding Graduate Student Award for Recognition of <i>Exceptional Promise in the Ph.D. Program with an Expectation of Continued Excellence in Research</i>, 2025 • Special Recognition for Outstanding Review for DIS 2025 • UD CIS Distinguished Student Award 2024 • Special Recognition for Outstanding Review for CHI 2024 • Class Topper for Academic Year 2020-2021
GRANTS & FUNDING	<p>Music for Listeners with Autism: An Online Platform for Collecting Music Interaction Data from Children with Autism <i>University of Delaware, Institute of Engineering Drive Health – Seed Translational Research Project</i> Role: Contributing Writer Award: \$177,725 PIs: Dr. Matthew Louis Mauriello and Dr. Daniel B. Stevens</p>
PEER MENTORING	<p>Research Mentor</p> <ul style="list-style-type: none"> • Liam Stapley, Undergrad Researcher (UD) 2025 - Present • Aastha Desai, Undergrad Researcher (UD) 2025 - Present • Elise Ruggiero, Undergrad Researcher (UD) 2023 - Present • Simon Brugel, Undergrad Researcher (UD) 2023 - 2025 • Malika Iyer, Undergrad Researcher (UD) 2023 - 2025 • Trung Nguyen, Undergrad Researcher (UD) 2025 • Christopher Bennet, Undergrad Researcher (UD) 2023-2024 • Zoe Lipkin, Undergrad Researcher (UD) 2023-2024

- Connor Penhale, Undergrad Researcher (UD) 2023
- Ryan Schaffer, Undergrad Researcher (UD) 2023
- Guru Nayak, Undergrad Researcher (UD) 2023

WORK EXPERIENCE **Sensify Lab, Newark (USA)** *February 2023 – Present*
Graduate Research Assistant

- Working under Prof. Matthew Mauriello to make **formative musical experiences accessible to children with autism** and to create interfaces that can collect meaningful data about user interactions with sound.
- Providing valuable insights about listeners with **cognitive exceptionalities** and creating new avenues for research.

_VOIS, Pune (India) *August 2021 – July 2022*
Graduate Engineer Trainee

- Designed reactive microservice modules for enterprise-level services using **RESTful APIs**.
- Updated the **CI/CD pipeline in Jenkins** for deployment of Docker container images on **AWS EKS Kubernetes** cluster.
- Ensured 90% code quality by mitigating application vulnerabilities using **SonarQube**.
- Updated microservices under SCRUM to the latest **Spring Boot** version, improving performance and scalability.

eGlobalDoctors LLC, San Francisco (USA) *June 2020 – July 2021*
Software Engineer Intern

- Developed **Backend RESTful APIs** and integrated various data models using business logic.
- Implemented the data model for a full-stack web application using **PostgreSQL**.
- Built and deployed a web application from scratch that provided free health counseling to over **2500 people** during the COVID-19 second wave in India.

Upcloud Technology PVT LTD, Mumbai (India) *July 2020 – September 2020*
Deep Learning Intern

- Developed a **Deep Learning model** for a Menstrual Cycle Tracker and an Alert System.
- Designed models for adaptive prediction and improvement of next cycle estimation.

SKILLS **Programming Languages:** C, C++, Java, Python, JavaScript, MATLAB, C#, .Net
Frameworks: Keras, TensorFlow, PyTorch, RADTorch, Angular, PrimeNG, NodeJS, Flask, Spring Boot, REST Architecture, Docker, GIT, Unity3D, MoveNet
Database: MySQL, PostgreSQL, Oracle, Firebase
Cloud: Azure, AWS, Heroku, Kubernetes

TEACHING	<p>Guest Lecturer, University of Delaware <i>April 22, 2025</i></p> <p>Delivered a guest lecture in CISC655: Communication Skills for CS Researchers, taught by Dr. Kathleen McCoy.</p> <p><i>Topic: “Addressing Paper Reviews and Writing Rebuttals”</i></p>
SERVICES	<p>Reviewer</p> <ul style="list-style-type: none"> • ACM Conference on Human Factors in Computing Systems (CHI), 2026 • ACM SIGCHI Conference on Computer-Supported Cooperative Work & Social Computing (CSCW), 2025 • ACM Interaction Design and Children (IDC), 2025 • ACM Designing Interactive Systems (DIS), 2025 • ACM Interaction Design and Children (IDC), 2024 • ACM Conference on Human Factors in Computing Systems (CHI), 2024 <p>Community Service</p> <ul style="list-style-type: none"> • Participated in the Brennen School’s Artapalooza events on April 19, 2024 and April 16, 2025, where we hosted a hands-on stall featuring our interactive music prototype <i>uCue</i> for children with ASD. Activities included guided play sessions and opportunities to engage with a live musical choir and other sensory-rich experiences.