

ABHISHEK KARWANKAR

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EDUCATION	University of Delaware <i>Ph.D. in Computer and Information Sciences</i> <i>M.S. in Computer and Information Sciences</i> Advisor: Dr. Matthew Louis Mauriello	<i>Newark, DE</i> <i>2024 - Present</i> <i>2022 - 2024</i>
	Pune Institute of Computer Technology <i>Bachelor of Engineering in Electronics and Telecommunication</i>	<i>Pune, Maharashtra</i> <i>2017 - 2021</i>

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	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. PP1. "Music for Autistic Listeners: A Music Theory Community Engagement Project." at the CIS 60th Anniversary Celebration, University of Delaware, May 4-5, 2024.
PROTOTYPE DEMONSTRATIONS	PD3. "Music for Autistic Listeners: A Music Theory Community Engagement Project." Artapalooza. Brennen School, Newark, DE, April 16, 2025. PD2. "Music for Autistic Listeners: A Music Theory Community Engagement Project." UD Inventors Recognition. University of Delaware, October 22, 2024. PD1. "Music for Autistic Listeners: A Music Theory Community Engagement Project." Artapalooza. Brennen School, Newark, DE, April 19, 2024.
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></p> <p>Role: Contributing Writer Award: \$177,725</p> <p>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

	<ul style="list-style-type: none"> Connor Penhale, Undergrad Researcher (UD) Ryan Schaffer, Undergrad Researcher (UD) Guru Nayak, Undergrad Researcher (UD) 	2023 2023 2023
WORK EXPERIENCE	Sensify Lab, Newark (USA) <i>Graduate Research Assistant</i>	<i>February 2023 – Present</i>
	<ul style="list-style-type: none"> 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) <i>Graduate Engineer Trainee</i>	<i>August 2021 – July 2022</i>
	<ul style="list-style-type: none"> 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) <i>Software Engineer Intern</i>	<i>June 2020 – July 2021</i>
	<ul style="list-style-type: none"> 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) <i>Deep Learning Intern</i>	<i>July 2020 – September 2020</i>
	<ul style="list-style-type: none"> 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 **Guest Lecturer, University of Delaware** *April 22, 2025*
Delivered a guest lecture in CISC655: Communication Skills for CS Researchers, taught by Dr. Kathleen McCoy.
Topic: "Addressing Paper Reviews and Writing Rebuttals"

SERVICES **Reviewer**

- 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

Community Service

- 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 *uCue* for children with ASD. Activities included guided play sessions and opportunities to engage with a live musical choir and other sensory-rich experiences.