

Mrishika Kannan Nair

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EDUCATION

MSE Computer Science, JOHNS HOPKINS UNIVERSITY | Baltimore, MD, USA

Expected 2026

Relevant coursework : Deep Learning, Cognitive Artificial Intelligence, Human Language Technology

B.Tech Computer Science & Design, IIIT | Delhi, India | CGPA: 8.04/10

2020 - 2024

Relevant coursework : Big Data Analytics, Computer Graphics programming, User Design in XR, VR development, User experience Design, Inclusive and Accessible Design, Artificial Intelligence, Machine learning

SKILLS

- **Core competencies:** Full Stack Development, Human Computer Interaction, Machine Learning, Deep Learning, REST API Design
- **Programming Languages:** Java, Python, C++, JavaScript, SQL
- **Framework and tools:** Django, ReactJS, Node.js, NestJS, Git, Kubernetes, Docker, PyTorch, Scikit-learn, OpenGL, Unity, Unreal engine
- **Transferable:** Strong communicator, Adaptable, Detail-oriented, Certified in strategic leadership and team management

EXPERIENCE

Research Assistant

Aug 2024 – Present

Intuitive Computing Lab | JHU, Baltimore, USA

- Developing LLM powered voice assistants to support elderly healthcare management. Implemented a web application enabling users to upload prescriptions (PNG/PDF), leveraging OCR for targeted text extraction from regions of interest. The extracted text is processed with a language model to generate after-visit summaries and health guidelines.
- Integrated with GPT and Alexa sdk for enabling easy voice driven interactions and reminders
- Tech Stack & Libraries: Python, Javascript, OpenCV, pyesseract, Scikit-learn, ReactJS

Undergraduate Researcher

Aug 2023 – May 2024

Accessibility and Inclusive Design Lab | IIIT Delhi, India

- Redesigned medicine packaging with augmented QR codes with Text-to-speech conversion of medicine info to enhance accessibility for the geriatric population, targeting visual impairments and diminished tactile sensitivities. Conducted and expansive user study and developed a complementary app to help elderly individuals manage their medication regimen.
- The new prototype reduced the time to analyse the medicine info by 80%, and accuracy in identifying the medicine increased to 96%
- **Published** research paper as the first author in the Journal of the HCI International Conference, 2024.
- Tech Stack & Libraries: Python, Flutter for cross platform mobile application, Firebase

Founder, CEO - Skyl

Aug 2022 – May 2024

Innovation & Incubation Centre IIIT

- Developed a crowd-sourced platform - Skyl, to empower India's unorganized gig sector workers through skill development.
- Implemented personalized course recommendation algorithms based on customer review analytics, facilitating targeted upskilling for service providers. This was complemented with a heat map feature for optimizing work hours. Service providers could improve their ratings and visibility within the platform upon successful completion of improvement courses.
- Established a foundation for future advancements, and scaling to a larger crowd
- Tech Stack & Libraries: Python, Flutter, Scikit-learn, D3.js for map visualisation, Django for database management

Software Developer Intern

Dec 2023 – Apr 2024

iWayPlus | Delhi, India

- Designed path finding algorithms for an indoor wayfinding project for the visually impaired. The algorithms leverage real-time crowd density data and accessibility features to optimize routing solutions, ensuring efficient navigation through complex indoor environments.
- Tech Stack & Libraries: Java for algorithm design(A*, Dijkstra), Beacon sensor based crowd data, D3.js for visualisation

Software Developer Intern

May 2023 - Jul 2023

Reliance Jio | Bombay, India

- Designed network-centric bot to manage CSV files with seamless integration & data synchronisation that enables users to securely upload, modify, and save their documents from anywhere
- Tech Stack & Libraries: Python, Django, Apache Commons CSV, RESTful APIs, Docker deployment

PROJECTS

AnatoVR, B.Tech Thesis | Creative Interfaces Lab, IIIT

- Developed a medical dissection training experience for medical students to explore and understand frog anatomy and simulate the process of dissection realistically with precision handling close to ± 0.5 cm of tools virtually. Reduced the need for physical specimens, and bridged the gap between experiential training and ecological concerns
- Developed the environment in unity, and the scripts were written in C#

Compattend

- Developed a facial recognition app using CNN for face detection and recognition with a test accuracy of 92%. Integrated with Google Classroom's API for attendance management and statistical performance insights, separate interfaces for instructors and students.
- Dart, OpenCV, FaceNet for identity verification, ensuring accuracy and security.

Solid Texturing

- Implemented a method for realistic image synthesis by transforming 2D exemplars into realistic 3D solid textures, using 2D to 3D mapping, stochastic algorithms, and histogram matching for optimized texture synthesis, Kopf et al.'s (2007) approach.

PUBLICATION & CERTIFICATIONS

- [*Inclusive Medicine Packaging for the Geriatric Population: Bridging Accessibility Gaps*](#), included in the journal of HCI International conference 2024 - First author, Lead researcher
- **Certifications** : Strategic leadership & management Specialisation, Virtual reality specialization, Machine Learning Engineering for Production (MLOps), Generative Adversarial Networks (GANs), Machine Learning Specialization by Stanford University