

Anukriti Kumar






PhD Student | University of Washington

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Education

- Sept 2023	University of Washington PhD in Information Science (Research Interests: HCI, Responsible AI) Advisor: Prof. Lucy Lu Wang	Seattle, WA
July 2021 August 2017	Delhi Technological University (Formerly, Delhi College of Engineering) B.Tech student in Information Technology University Rank: 2 in 2360 students	GPA: 9.82/10

Research Experience

Present Sept 2023	University of Washington Language Accessibility Research Lab <i>Graduate Research Assistant Advisor: Prof. Lucy Lu Wang</i> Conducting research on AI-driven accessibility tools aimed at making digital content production and consumption more inclusive, for people with vision and cognitive disabilities.	Seattle, WA
June 2023 July 2021	Microsoft Research Technology and Empowerment Group  <i>Research Fellow Advisors: Dr. Saikat Guha, Tanuja Ganu, Dr. Mohit Jain</i> <ul style="list-style-type: none">> Developed a system for making printed content accessible to those with vision impairment, leveraging state-of-the-art computer vision models to alleviate pressing challenges identified from user study and iterative feedback.> Engaged in a research study for investigating the potential of smartphone applications to develop healthy eye habits for preventing digital strain. The developed system tracks eye parameters, such as eye blink rate, and provides actionable feedback based on them.	Bengaluru, India
June 2021 Jan 2021	Nanyang Technological University Cyber Security Research Centre  <i>Undergraduate Research Intern Advisors: Prof. Thambipillai Srikanthan, Prof. Siew-Kei Lam</i> Implemented prototype-based classification model for malware classification using static, behavioral, and memory stats from limon sandbox along with hardware features to incorporate side-channel attacks.	Singapore
Dec 2019 Sept 2019	Indian Institute of Technology  <i>Research Intern Mentor: Dr. Chetan Arora</i> Worked on conventional 3D-CNN and Siamese neural networks to learn effective feature representations from videos of human gait with distance metric learning for human identification.	Delhi, India
July 2019 May 2019	Samsung R&D Institute Natural Language Understanding Team  <i>Student Trainee Mentor: Vikram Mupparthi</i> Implemented an end-to-end solution for generating triplets (speaker, persona category and value) from real time conversation to make voice assistants personalized for daily use.	Bengaluru, India
Dec 2018 Sept 2018	Delhi Technological University Biometric Research Lab  <i>Research Intern Advisor: Prof. Dinesh Kumar Vishwakarma</i> Worked on developing a robust system for the classification of traffic signs in real-time using deep neural networks and achieved an accuracy of around 97.6%, comparable to state-of-the-art architectures.	Delhi, India

Industry Experience

Aug 2020 May 2020	OCaml Outreachy Internship Program  <i>International Industrial Intern Mentors: Guillaume Bury, Vincent Laviron</i> Reduced the number of global mutable states from OCaml compiler codebase by identifying parts of the compiler that use mutable states and also proposing refactoring changes to fix those issues.	Remote
July 2020 June 2020	Linkedin Performance Insights Team  <i>Software Development Engineering Intern Mentor: Saurabh Badhwar</i> Implemented Spark jobs that aggregated API metrics from a service performance platform and generated call tree data in order to provide useful insights to software developers.	Bengaluru, India

June 2020 Apr 2020	D.E. Shaw & Co. Application Engineering Team [🌐] <i>System Intern Mentor: Nithin Srikar Karnala</i> Designed and implemented an AI-powered Slack bot to improve the efficiency of the Helpdesk team in answering frequently asked questions. Created a centralized FAQ repository across various help channels for easy access to essential information.	Hyderabad, India
Feb 2019 Dec 2018	Bharti Airtel Product Engineering Team [🌐] <i>SDE Intern Mentor: Bhupendra Niranjana</i> Conducted a research project on integrating biometric (eye) based liveness detection into the company's product for customer verification during the purchase of a new SIM card.	Gurugram, India

Publications

S=In Submission, C=Conference, W=Workshop, B=Book Chapter, J=Journal

- [C.3] **Uncovering the New Accessibility Crisis in Scholarly PDFs** [🌐]
Anukriti Kumar, Lucy Lu Wang
(In-person) [ASSETS'24]
- [W.4] **Harnessing CLIP for Evidence Identification in Scientific Literature: A Multimodal Approach to the Context24 Shared Task** [🌐]
Anukriti Kumar, Lucy Lu Wang
Scholarly Document Processing [ACL'24 Workshop]
- [W.3] **Making Digital Content Accessible for People with Vision Impairments** [🌐]
Anukriti Kumar
A11yFutures: Envisioning the Future of Accessibility Research [ASSETS'23 Workshop]
- [W.2] **ChartParser: Automatic Chart Parsing for Print-Impaired** [🌐]
Anukriti Kumar, Tanuja Ganu, Saikat Guha
Scientific Document Understanding [AAAI'23 Workshop]
- [W.1] **Document Navigability: A Need for Print-Impaired** [🌐]
Anukriti Kumar, Tanuja Ganu, Saikat Guha
Accessibility, Vision and Autonomy Meet [CVPR'22 Workshop]
- [C.2] **Realistic face generation using a textual description** [🌐]
Anukriti Kumar, Anurag Mudgil, Nakul Dodeja, Dinesh Kumar Vishwakarma
(Virtual) [ICCMC'21]
- [C.1] **Intelligent Transport System: Classification of Traffic Signs Using Deep Neural Networks in Real Time** [🌐]
Anukriti Kumar, Tanmay Singh, Dinesh Kumar Vishwakarma
(Virtual) [ICCV'20]
- [B.1] **Artificial Intelligence (AI) at the Edge for Smart Cities Applications** [🌐]
Anurag Mudgil, Anukriti Kumar, Anvit Negi, Arman Dhanda, Surendrabikram Thapa, S. Indu
Demystifying Big Data Analytics for Industries and Smart Societies [Book Chapter]
- [S.1] **i-Fit: Taking charge of eye fitness**
Anukriti Kumar, Mohit Jain, Nipun Kwatra
[Working Paper]

Awards and Achievements

Grants

- > **Google Academic Research Award**, Co-member of a grant for the project "Making Education Equitable, Accessible, and Effective using AI
- > **University of Washington**, eScience Institute's Azure Cloud Credits for Research and Teaching

Hackathons

- > **Winner**, Citi Campus Innovation Challenge 3.0
- > **Audience Choice Award**, Citi Campus Innovation Challenge 3.0
- > **Winner**, Stratethon 2.0 by Optum
- > **Winner, Sponsored Hack - Accelerate91 Future of Edge Computing** Microsoft Global Hackathon 2021
- > **Runner Up**, Makeathon by American Express
- > **National Finalist**, KPMG Ideation Challenge
- > **Top 10**, Rakathon by Rakuten
- > **Top 60 girls in India**, Wintathon by LinkedIn
- > **Top 6**, Vihaan by IEEE, DTU

Scholarships

- › **K.C. Mahindra Scholarship:** 64 in 2200+ applicants pursuing post-graduate studies in premier universities abroad
- › **Cargill Global Scholarship:** 1 in 10 students across India, received a scholarship of 5000 USD
- › **NTU-India Connect Fellowship:** Fully-funded research internship for one semester at NTU, Singapore
- › **Diversity Scholarship:** Student attendee (fully funded) for KubeCon, Flink Forward, PyData, ODSC West'20
- › **Academic Scholarship:** Received scholarship from DTU in 1st, 4th year for academic excellence
- › **Merit Scholarship:** Awarded scholar coat for being consistent topper in school for 5 years

Others

- › Shortlisted for **Innovate India research and innovation program** by Delhi Government
- › Selected for **Cornell, Maryland, Max Planck Pre-doctoral Research School (CMMRS), 2020**
- › Attended **ACM India Winter School on Fairness, Accountability, and Transparency in AI** (by IIT, Kharagpur)
- › Selected for **5th Summer School on AI** (conducted by CVIT)

Leadership Roles

Accessibility Chair, Session Chair and Panel Moderator

Mar'24

Para.CHI.DUB event (parallel event to CHI '24 for those unable or unwilling to join CHI '24)

- › Led accessibility initiatives, ensuring inclusive participation for all attendees.
- › Facilitated academic sessions, managed speaker transitions, and engaged with audience queries.
- › Guided discussions among panelists, ensuring diverse perspectives and interactive dialogue.

Host

- › Design, Use and Build (DUB) Seminar, University of Washington (Oct'23 - Present)
- › ACM India-W Annual Summit (Dec'23)
- › Multi-modal networking session at IKDD 2021 (Aug'21)

Mentor

- › Mentorship Program 4.0 organized by Women Who Code, Delhi (Jan'22)
- › SheHacks, Delhi's largest all women Hackathon organized by Climb, DTU (Apr'21)
- › Toyota Code for safer India Hackathon, organized by IRSC (Dec'19)
- › National Service Scheme (Aug'18-Aug'19)

Chairperson, Women in Tech

Aug'20 - Aug'21

International Organization of Software Developers

- › Organized several women-centric hackathons and events during the technical fest
- › Delivered multiple talks on open-source, android development, and research
- › Organized an internship fair and a talk series by researchers from different institutions

Participant

Aug'21-Jun'23

Technology and Empowerment Reading Group, Microsoft Research, India

Active participant in our weekly reading group where I regularly present research papers and engage in discussions.

Talks

Uncovering the New Accessibility Crisis in Scholarly PDFs

CREATE Seminar, Spring 2024

Document Navigability: A Need for Print-Impaired

EMPOWER 2022, IIT Madras Research Park

Democratizing Printed Content

Technology and Empowerment Reading Group, Microsoft Research, India

Data Privacy with Federated Learning

Technology and Empowerment Reading Group, Microsoft Research, India

Are We Excluding, If We Are Not Consciously Including

Cargill India Virtual International Women's Day event

Teaching

Graduate Teaching Assistant

- › Autumn 2024: Research Methods (INFO 300)
- › Autumn 2024: Text Mining and Analytics (INFO 498 B)
- › Winter 2023: Core Methods in Data Science (INFO 370)

Skills

Languages	C++, C, Python, Java, SQL, HTML/CSS
ML Libraries	OpenCV, Keras, PyTorch, Tensorflow
Development	React, Android App Development, Flask, Basic Web Development
Relevant Coursework (Online)	Mathematics for Machine Learning, Sequence Models, Neural Networks and Deep Learning, Convolutional Neural Networks for Visual Recognition (Coursera), Android Application Development, Computer Vision: Deep Learning (Udemy), Machine Learning with Python (IBM)
Relevant Coursework (Classroom)	Research Design, Disability Inclusion & Accessibility for Technologists, Theoretical Foundations in Info. Science, Quantitative and Qualitative Methods in Info. Science, Linear Algebra and Differential Equations, Machine Learning, Pattern Recognition, Artificial Intelligence, Object Oriented Programming, Database Management Systems, Operating System, Data Structures and Algorithms