

# Karan Ahuja

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## FIELDS OF INTEREST

Machine Learning and Sensing, Ubiquitous Computing and Human-Computer Interaction.

## PROFESSIONAL EXPERIENCE

### Northwestern University

Present | Evanston, USA | Affiliate Assistant Professor

Affiliate Assistant Professor in the Department of Computer Science at the McCormick School of Engineering.

### Google

Present | Seattle, USA | Research Scientist

Visiting Faculty Researcher at Google AR/VR.

### Apple

May – Aug 2022 | Cupertino, USA | Research Intern

Collaborators: Camera Incubation and Wireless Sensing Group | Investigated power-efficient human sensing and activity recognition techniques.

### Facebook Reality Labs

May – Aug 2021 | Redmond, USA | Research Intern

Advised by Wolf Kienzle | Worked on context-aware user digitization techniques using sparse on-body sensor configurations.

### Microsoft Research

May – Aug 2019 | Redmond, USA | Research Intern

Advised by Eyal Ofek, Mar Gonzalez-Franco, Christian Holz and Andy Wilson | Worked on sensing and interaction techniques for mixed reality.

### IBM Research

May – Jul 2016 | May – Dec 2015 | New Delhi, India | Research Intern

Advised by Kuntal Dey | Worked on perceptual computing on the topics of eye tracking and gaze estimation.

## EDUCATION

### Carnegie Mellon University | PITTSBURGH, USA

2017 - 2023 | PhD | Human-Computer Interaction

Advisors: Chris Harrison and Mayank Goel

### Indian Institute of Information Technology | GUWAHATI, INDIA

2013 - 2017 | B.Tech. | Computer Science and Engineering

GPA : 4/4 | Department Rank 1

## AWARDS AND HONORS

<b>ACM SIGCHI Outstanding Dissertation Award</b>	2024
<b>Wissner Slivka Chair</b> in Computer Science, Northwestern University	2024
<b>Honorable Mention Award (Top 5%) ACM CHI</b>	2023
<b>Heidelberg Laureate Forum</b> Young Researcher	2022
<b>Siebel Fellow</b>	2022
<b>Honorable Mention Award (Top 5%) ACM CHI</b>	2022
<b>Fast Company Innovation by Design Finalist</b> , Pose-on-the-Go	2021
<b>Fast Company Innovation by Design Honorable Mention</b> , Direction-of-Voice	2021

<b>Facebook Fellowship Finalist</b>	2021
<b>Honorable Mention Award (Top 5%)</b> ACM CHI	2021
<b>Qualcomm Innovation Fellowship Finalist</b>	2020
<b>Collegiate Inventors Competition Graduate Finalist</b>	2020
<b>Fast Company Innovation by Design Finalist</b> , Ubicoustics	2020
<b>Honorable Mention Award (Top 5%)</b> ACM UIST	2019
Winner of <b>President's Gold Medal</b> India	2017
<b>IBM Blue Scholar</b>	2017

## PUBLICATIONS

31. Riku Arakawa, **Karan Ahuja**, Kristie Mak, Gwendolyn Thompson, Sam Shaaban, Oliver Lindhiem, and Mayank Goel. 2023. LemurDx: Using Unconstrained Passive Sensing for an Objective Measurement of Hyperactivity in Children with no Parent Input. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) 7, 2, Article 46 (June 2023), 23 pages. UbiComp '23.
- 🏆 30. Vimal Mollyn, Riku Arakawa, Mayank Goel, Chris Harrison, and **Karan Ahuja**. 2023. IMUPoser: Full-Body Pose Estimation using IMUs in Phones, Watches, and Earbuds. In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23). Association for Computing Machinery, New York, NY, USA, Article 529, 1–12. **Best Paper Nomination**
29. Riku Arakawa, Mayank Goel, Chris Harrison, and **Karan Ahuja**. 2022. RGBDGaze: Gaze Tracking on Smartphones with RGB and Depth Data. In Proceedings of the 2022 International Conference on Multimodal Interaction (ICMI '22). Association for Computing Machinery, New York, NY, USA, 329–336.
28. Vimal Mollyn, **Karan Ahuja**, Dhruv Verma, Chris Harrison, and Mayank Goel. 2022. SAMoSA: Sensing Activities with Motion and Subsampled Audio. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) 6, 3, Article 132 (September 2022), 19 pages. UbiComp '22.
27. **Karan Ahuja**, Vivian Shen, Cathy Fang, Nathan Riopelle, Andy Kong, and Chris Harrison. 2022. ControllerPose: Inside-Out Body Capture with VR Controller Cameras. In CHI Conference on Human Factors in Computing Systems (CHI '22). Association for Computing Machinery, New York, NY, USA, Article 108, 1–13.
- 🏆 26. Craig Shultz, Daehwa Kim, **Karan Ahuja**, and Chris Harrison. 2022. TriboTouch: Micro-Patterned Surfaces for Low Latency Touchscreens. In CHI Conference on Human Factors in Computing Systems (CHI '22). Association for Computing Machinery, New York, NY, USA, Article 347, 1–13. **Best Paper Nomination**
25. **Karan Ahuja**, Eric Whitmire, Joseph Greer, and Wolf Kienzle. 2022. ActivityPoser: Activity driven Full-Body Pose Estimation from Sparse IMU Configurations. In Symposium on Spatial User Interaction (SUI '22). Association for Computing Machinery, New York, NY, USA, Article 19, 1–2.
24. **Karan Ahuja**, Paul Strelci, and Christian Holz. 2021. TouchPose: Hand Pose Prediction, Depth Estimation, and Touch Classification from Capacitive Images. In The 34th Annual ACM Symposium on User Interface Software and Technology (UIST '21). Association for Computing Machinery, New York, NY, USA, 997–1009.
23. Andy Kong, **Karan Ahuja**, Mayank Goel, and Chris Harrison. 2021. EyeMU Interactions: Gaze + IMU Gestures on Mobile Devices. In Proceedings of the 2021 International Conference on Multimodal Interaction (ICMI '21). Association for Computing Machinery, New York, NY, USA, 577–585.
22. **Karan Ahuja**, Eyal Ofek, Mar Gonzalez-Franco, Christian Holz, and Andrew D. Wilson. 2021. CoolMoves: User Motion Accentuation in Virtual Reality. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 5, Issue 2, Article 52 (June 2021), 23 pages. UbiComp '21.
- 🏆 21. **Karan Ahuja**, Sven Mayer, Mayank Goel, and Chris Harrison. 2021. Pose-on-the-Go: Approximating User Pose with Smartphone Sensor Fusion and Inverse Kinematics. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 9, 1–12. **Fast Company Innovation by Design Finalist**
20. **Karan Ahuja**, Yue Jiang, Mayank Goel, and Chris Harrison. 2021. Vid2Doppler: Synthesizing Doppler Radar Data from Videos for Training Privacy-Preserving Activity Recognition. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 292, 1–10.
19. **Karan Ahuja\***, Deval Shah\*, Sujeeth Paredy, Franceska Xhakaj, Amy Ogan, Yuvraj Agarwal, and Chris Harrison. 2021. Classroom Digital Twins with Instrumentation-Free Gaze Tracking. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 484, 1–9. (\*Equal Contribution)

- 🏆 18. Yasha Iravantchi, **Karan Ahuja**, Mayank Goel, Chris Harrison, and Alanson Sample. 2021. PrivacyMic: Utilizing Inaudible Frequencies for Privacy Preserving Daily Activity Recognition. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 198, 1–13. **Best Paper Nomination**
17. **Karan Ahuja**, Andy Kong, Mayank Goel, and Chris Harrison. 2020. Direction-of-Voice (DoV) Estimation for Intuitive Speech Interaction with Smart Devices Ecosystems. In Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST '20). Association for Computing Machinery, New York, NY, USA, 1121–1131.
16. **Karan Ahuja**, Mayank Goel, and Chris Harrison. 2020. BodySLAM: Opportunistic User Digitization in Multi-User AR/VR Experiences. In Symposium on Spatial User Interaction (SUI '20). Association for Computing Machinery, New York, NY, USA, Article 16, 1–8.
15. **Karan Ahuja**, Abhishek Bose, Mohit Jain, Kuntal Dey, Anil Joshi, Krishnaveni Achary, Blessin Varkey, Chris Harrison, and Mayank Goel. 2020. Gaze-based Screening of Autistic Traits for Adolescents and Young Adults using Prosaic Videos. In Proceedings of the 3rd ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS '20). Association for Computing Machinery, New York, NY, USA, 324.
- 🏆 14. **Karan Ahuja**, Chris Harrison, Mayank Goel, and Robert Xiao. 2019. MeCap: Whole-Body Digitization for Low-Cost VR/AR Headsets. In Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19). Association for Computing Machinery, New York, NY, USA, 453–462. **Best Paper Nomination**
- 🏆 13. **Karan Ahuja**, Sujeath Pareddy, Robert Xiao, Mayank Goel, and Chris Harrison. 2019. LightAnchors: Appropriating Point Lights for Spatially-Anchored Augmented Reality Interfaces. In Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19). Association for Computing Machinery, New York, NY, USA, 189–196. **Collegiate Inventors Competition Finalist**
12. **Karan Ahuja\***, Dohyun Kim\*, Franceska Xhakaj, Virag Varga, Anne Xie, Stanley Zhang, Jay Eric Townsend, Chris Harrison, Amy Ogan, and Yuvraj Agarwal. 2019. EduSense: Practical Classroom Sensing at Scale. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 3, Issue 3, Article 71 (September 2019), 26 pages. UbiComp '19. (\*Equal Contribution)
11. **Karan Ahuja\***, Rushil Khurana\*, Zac Yu, Jennifer Mankoff, Chris Harrison, and Mayank Goel. 2018. GymCam: Detecting, Recognizing and Tracking Simultaneous Exercises in Unconstrained Scenes. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 2, Issue 4, Article 185 (December 2018), 17 pages. UbiComp '19. (\*Equal Contribution)
10. Jason Wu, **Karan Ahuja**, Richard Li, Victor Chen, and Jeffrey Bigham. 2019. ScratchThat: Supporting Command-Agnostic Speech Repair in Voice-Driven Assistants. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 3, Issue 2, Article 63 (June 2019), 17 pages. UbiComp '19.
9. **Karan Ahuja**, Rahul Islam, Varun Parashar, Kuntal Dey, Chris Harrison, and Mayank Goel. 2018. EyeSpyVR: Interactive Eye Sensing Using Off-the-Shelf, Smartphone-Based VR Headsets. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 2, Issue 2, Article 57 (June 2018), 10 pages. UbiComp '18.
- 🏆 8. Gierad Laput, **Karan Ahuja**, Mayank Goel, and Chris Harrison. 2018. Ubioustics: Plug-and-Play Acoustic Activity Recognition. In Proceedings of the 31st Annual ACM Symposium on User Interface Software and Technology (UIST '18). Association for Computing Machinery, New York, NY, USA, 213–224. **Fast Company Innovation by Design Finalist**
7. Aanand Nayyar, Utkarsh Dwivedi, **Karan Ahuja**, Nitendra Rajput, Seema Nagar, and Kuntal Dey. 2017. OptiDwell: Intelligent Adjustment of Dwell Click Time. In Proceedings of the 22nd International Conference on Intelligent User Interfaces (IUI '17). Association for Computing Machinery, New York, NY, USA, 193–204.
6. Utkarsh Dwivedi, **Karan Ahuja**, Rahul Islam, Ferdous A. Barbhuiya, Seema Nagar, and Kuntal Dey. 2017. EyamKayo: Interactive Gaze and Facial Expression Captcha. In Proceedings of the 22nd International Conference on Intelligent User Interfaces Companion (IUI '17 Companion). Association for Computing Machinery, New York, NY, USA, 53–56.
5. **Karan Ahuja**, Anubhav Pandey, Ferdous A. Barbhuiya, Seema Nagar, and Kuntal Dey. "SmallStore: A region-of-interest based adaptive system for compressing human face videos." In TENCON 2017-2017 IEEE Region 10 Conference, pp. 1004-1009. IEEE, 2017.
4. **Karan Ahuja**, Rahul Islam, Ferdous A. Barbhuiya, and Kuntal Dey. "A preliminary study of CNNs for iris and periocular verification in the visible spectrum." In 2016 23rd International conference on pattern recognition (ICPR), pp. 181-186. IEEE.
3. **Karan Ahuja**, Rahul Islam, Ferdous A. Barbhuiya, and Kuntal Dey. "Convolutional neural networks for ocular smartphone-based biometrics." Pattern Recognition Letters 91 (2017): 17-26.
2. **Karan Ahuja**, Ruchika Banerjee, Seema Nagar, Kuntal Dey, and Ferdous Barbhuiya. "Eye center localization and detection using radial mapping." In 2016 IEEE International Conference on image processing (ICIP), pp. 3121-3125. IEEE, 2016.

1. **Karan Ahuja** , Abhishek Bose, Seema Nagar, Kuntal Dey, and Ferdous Barbhuiya. "ISURE: User authentication in mobile devices using ocular biometrics in visible spectrum." In 2016 IEEE International Conference on Image Processing (ICIP), pp. 335-339. IEEE, 2016.

## PATENTS

20. E Ofek, M Franco, A Wilson, K Ahuja, C Holz. Real time styling of motion for virtual environments. US Patent App. 11,055,891. **Patent granted**
19. K Ahuja, S Pareddy, R Xiao, C Harrison, M Goel. System and method using light sources as spatial anchors. US Patent App. US 16/868,061 filed Nov 2020.
18. G Laput, K Ahuja, M Goel, C Harrison. System and method for acoustic activity recognition. US Patent App. 11,069,334. **Patent granted**
17. R Vaculin, U Dwivedi, K Ahuja, S Nagar, K Dey. Product placement optimization using blind-spot analysis in retail environments. US Patent App. 11,120,459. **Patent granted**
16. K Ahuja, K Dey, S Mukherjee, S Nagar. Selective display of objects based on eye gaze attributes. US Patent App. 11,119,572. **Patent granted**
15. K Ahuja, R Banerjee, K Dey, SKV Sessa, S Nagar. System and method for creating shoppers gaze, implicit interest, identity and social network based information disbursement system and combo deals. US Patent App. 15/430,603 filed Feb 2017.
14. K Ahuja, H Bansal, K Dey, S Nagar. Pre-Cooling and Pre-Heating Transportation Vehicles Using Predictive Crowd Estimation Techniques. US Patent App. 15/407,816. **Patent granted**
13. K Ahuja, H Bansal, K Dey, S Nagar, R Vaculin. Regulating environmental conditions within an event venue. US Patent App. 15/836,802 filed Jan 2017.
12. K Ahuja, K Dey, U Dwivedi, S Nagar, R Vaculin. System, method and computer program product for stateful instruction-based dynamic man-machine interactions for humanness validation. US Patent App. 15/400,458 filed Jan 2017.
11. K Ahuja, K Dey, S Nagar, R Vaculin. Using dynamic facial landmarks for head gaze estimation. US Patent App. US15/841,653 filed Dec 2017.
10. K Ahuja, K Dey, S Nagar, R Vaculin. Analyzing team game play interactions using gaze data. US Patent App. 9,999,805. **Patent granted**
9. K Ahuja, K Dey, S Nagar, R Vaculin. System, Method and Recording medium for tracking gaze with respect to a moving plane with a camera with respect to a moving plane. US Patent 9,874,934. **Patent granted**
8. K Ahuja, K Dey, S Nagar, R Vaculin. System, method, and recording medium for tracking gaze using only a monocular camera from a moving screen. US Patent 9,996,744. **Patent granted**
7. K Ahuja, K Dey, S Nagar, R Vaculin. Determining Player Performance Statistics Using Gaze Data. US Patent App. 15/184,229 filed June 2016. **Patent granted**
6. K Ahuja, K Dey, S Nagar, R Vaculin. Analyzing and Interpreting a Referee's Actions Using Gaze Data. US Patent App. 15/184,239 filed June 2016.
5. K Ahuja, K Dey, S Nagar, R Vaculin. System, method, and recording medium for advertisement remarketing. US Patent App. 15/180,260 filed June 2016.
4. K Ahuja, K Dey, S Nagar, R Vaculin. System, method, and recording medium for location-based advertisement. US Patent App. 15/180,256 filed June 2016.
3. K Ahuja, R Banerjee, K Dey, S Nagar. Gaze Point Detection Using Dynamic Facial Reference Points Under Varying Lighting Conditions. US Patent App. 10,082,866. **Patent granted**
2. K Ahuja, R Banerjee, K Dey, S Nagar. Managing power, lighting, and advertising using gaze behavior data. US Patent App. 15/002,746 filed Jan 2016.
1. K Ahuja, U Dwivedi, K Dey, S Nagar, R Vaculin. Gaze based classroom notes generator. US Patent App. 15/842,334. **Patent granted**

## PAPER REVIEWING

**ACM CHI**

2019, 2020, 2021, 2022, 2023, 2024

**ACM UIST**

2019, 2020, 2021, 2022, 2023

**ACM IMWUT**

2018, 2019, 2020, 2021, 2022, 2023

ACM MobileHCI	2019, 2021, 2022
IEEE/ACM ISMAR	2020, 2021, 2022
ACM ISS	2020, 2022
ACM TOCHI	2022
ACM SIGGRAPH	2021
IEEE TBIOM	2021
IET Image Processing	2018
Elsevier CVIU	2017

## ACADEMIC SERVICE

<b>Organizing Committee</b> , Interactivity Co-Chair, ACM CHI	2025
<b>Organizing Committee</b> , Workshop Co-Chair, ACM UIST	2024
<b>Program Committee, Associate Chair (AC)</b> , ACM UIST Papers	2024
<b>Organizing Committee</b> , IEEE Body Sensor Networks	2024
<b>PhD Admissions Committee</b> , Computer Science, Northwestern University	2024
<b>PhD Admissions Committee</b> , Technology and Social Behaviour, Northwestern University	2024
<b>Program Committee, Associate Chair (AC)</b> , ACM CHI Papers	2024
<b>Editor-in-Chief</b> , ACM XRDS (formally Crossroads)	2021-23
<b>Session Chair</b> , ACM UIST, XR Interactions	2022
<b>Program Committee, Associate Chair (AC)</b> , ACM MobileHCI Papers	2022
<b>Program Committee, Associate Chair (AC)</b> , ACM UIST Papers	2022
<b>Best Paper Selection Committee</b> , ACM MobileHCI Papers	2021
<b>Session Chair</b> , ACM UIST, Applications in Mixed Reality	2021
<b>Session Chair</b> , ACM MobileHCI, Augmented and Virtual Reality	2021
<b>Session Chair</b> , ACM CHI, Input, Spatial Interaction and Practice Support	2021
<b>Session Chair</b> , ACM CHI, UX, Interaction Design and Research	2021
<b>Program Committee, Associate Chair (AC)</b> , ACM UIST Papers	2021
<b>Organizing Committee</b> , Video Co-Chair, ACM UIST	2021
<b>Program Committee, Associate Chair (AC)</b> , ACM MobileHCI Papers	2021
<b>Program Committee, Associate Chair (AC)</b> , ACM CHI Late-Breaking Work	2021
<b>Organizing Committee</b> , Video Chair, ACM UIST	2020
<b>Program Committee, Associate Chair (AC)</b> , ACM CHI Late-Breaking Work	2020

## TEACHING EXPERIENCE

<b>University of California Los Angeles</b> , Guest Lecture, Embedded Systems	2023
<b>Northwestern University</b> , Intro to Grad Studies	2023
<b>University of Michigan</b> , HCI Office Hour	2023
<b>Carnegie Mellon University</b> , Co-Instructor, Machine Learning and Sensing	2022
<b>University of California Los Angeles</b> , Guest Lecture, Engineering Interactive System	2022
<b>Teaching Assistant, Carnegie Mellon University</b> , User-Centered Research and Evaluation (Graduate)	2021
<b>Teaching Assistant, Carnegie Mellon University</b> , Building User-Focused Sensing Systems (Graduate)	2021
<b>Carnegie Mellon University</b> , Guest Lecture, Machine Learning and Sensing	2020

## SELECTED INVITED TALKS AND PRESENTATIONS

<b>Seoul National University, Keynote Speaker</b> , HCI Day	2023
<b>Samsung</b> , Building Practical and Deployable User Digitization Technologies	2023
<b>Google Research</b> , Enabling Practical and Rich User Digitization	2023
<b>University of Pittsburgh</b> , School of Nursing, Eye-tracking for Health Sensing	2023
<b>EPFL</b> , Enabling Practical and Rich User Digitization	2023
<b>MIT</b> , Enabling Practical and Rich User Digitization	2023
<b>Northwestern</b> , Enabling Practical and Rich User Digitization	2023
<b>Cornell</b> , Enabling Practical and Rich User Digitization	2023
<b>UW Madison</b> , Enabling Practical and Rich User Digitization	2023
<b>UMass Amherst</b> , Enabling Practical and Rich User Digitization	2023
<b>ETH Zurich</b> , Enabling Practical and Rich User Digitization On-the-Go	2023
<b>MBZUAI</b> , Enabling Practical and Rich User Digitization On-the-Go	2023
<b>Stanford</b> , HCI Lunch Seminar, Enabling Practical User Digitization On-the-Go	2022
<b>U Chicago</b> , Enabling Practical User Digitization On-the-Go	2022
<b>UT Austin</b> , Enabling Practical User Digitization On-the-Go	2022
<b>CMU Summit, Keynote Speaker</b> , AR/VR Panel	2022
<b>New York Augmented Reality Meetup</b> , User Digitization in XR	2022
<b>Indian Institute of Technology Gandhinagar</b> , Privacy Sensitive Sensing	2021
<b>Semiconductor Research Corporation</b> , Spatially-Anchored Augmented Reality Interfaces	2021
<b>CONIX</b> , Exploring Interactions and User-digitization in Extended Reality	2021
<b>Facebook Reality Labs</b> , User digitization and activity recognition	2021
<b>AREA Research</b> , Sensing Human Gestures	2020
<b>Carnegie Mellon University</b> , Edge Computing, Privacy Sensitive Sensing	2020
<b>CONIX</b> , Interactions in Augmented Reality	2020
<b>Microsoft Research</b> , AI Breakthroughs, Privacy Sensitive Sensing	2020
<b>Apple Machine Hearing and Sensing</b> , Direction-of -Voice Estimation	2020
<b>Apple AI and Machine Interaction</b> , Direction-of -Voice Estimation	2020
<b>Semiconductor Research Corporation</b> , LightAnchors	2020
<b>Qualcomm</b> , Ad Hoc Spatially-Anchored Augmented Reality Interfaces	2020
<b>AREA Research</b> , Spatially-Anchored Augmented Reality Interfaces	2019

## STUDENTS MENTORED

<b>Hongyu Mao</b> , Masters, Computational Design	2023-24
<b>Alexander Kyu</b> , Masters, Human-Computer Interaction	2023-24
<b>Vimal Mollyn</b> , Masters, Engineering Design and Data Science	2022-23
<b>Daehwa Kim</b> , Masters, Computer Science	2022
<b>Andy Kong</b> , Undergraduate, Computer Science	2020-21
<b>Riku Arakawa</b> , Masters, Computer Science	2021
<b>Dhruv Verma</b> , Undergraduate, Computer Science	2020
<b>Andey Ng</b> , Undergraduate, Information Systems	2019

## SELECTED PRESS COVERAGE

<b>Gizmodo</b> You Could Soon Move Around in VR With an iPhone, an Apple Watch, and Some AirPods	2023
<b>Hackster.io</b> Body Tracking on a Budget	2023
<b>Today Show</b> Step into the Metaverse: How the virtual world may change reality	2022
<b>NBC Nightly News</b> Inside the metaverse: what does the future of virtual reality feel like?	2022
<b>CNN</b> These researchers came up with a solution for one of VR's biggest issues: tracking your legs	2022
<b>Gizmodo</b> A Bump-Covered Screen Protector Can Surprisingly Make Touchscreens React Faster to Swipes	2022
<b>ACM TechNews</b> A Solution for One of VR's Biggest Issues: Tracking Your Legs	2022
<b>RoadToVR</b> Researchers Show Full-body VR Tracking with Controller-mounted Cameras	2022
<b>VR Times</b> Researchers Demonstrate Body Tracking via Modded VR Controllers in Meta Quest 2	2022
<b>RealVirtual</b> ControllerPose: full body capture with cameras on the controllers	2022
<b>UploadVR</b> Researchers Demonstrate Body Tracking From Cameras On VR Controllers	2022
<b>TechCrunch</b> Controlling your phone with your eyes	2022
<b>TechXplore</b> Your eyes can control your smartphone via new gaze-tracking tool	2022
<b>ACM CACM</b> The Eyes Have It	2022
<b>BiometricUpdate</b> Carnegie Mellon research develops gaze-tracking smartphone tool	2022
<b>TechHive</b> In the future, we might control our smart homes with just our eyes	2022
<b>Devdiscourse</b> New gaze-tracking tool lets you control your smartphone with your eyes	2022
<b>Daijiworld</b> New gaze-tracking tool to help your eyes control your smartphone	2022
<b>Android Police</b> This neat eye-tracking experiment looks like a weirdly convenient way to interact with your phone	2022
<b>HotHardware</b> Researchers Develop EyeMU Tech That Lets You Control Your Phone With Your Eyes	2022
<b>Business Wire</b> Siebel Scholars Foundation Announces Class of 2022	2021
<b>Silicon Valley Daily</b> Siebel Scholars Names 2022 Class	2021
<b>Pittsburgh Post-Gazette</b> As smart technology expands, focus is on privacy safeguards	2021
<b>TechCrunch</b> CMU researchers show potential of privacy-preserving activity tracking using radar	2021
<b>Cult of Mac</b> Full-body Animoji? Smart tech uses iPhone camera to track body motion	2021
<b>MLive</b> Worried your smart home device is listening to you?	2021
<b>Engadget</b> AI could tell smart speakers what direction your voice is coming from	2020
<b>Hackaday</b> Robots can finally answer, are you talking to me?	2020
<b>The Register</b> Hey, over here, I'm talking. Academics help computers figure out which way you're facing when you speak	2020
<b>PRNewsWire</b> 2020 Collegiate Inventors Competition Finalists Show Future of American Innovation	2020
<b>Digital Trends</b> Think your house is smart now? Here's a peek at what it'll be like with AR	2019
<b>The Register</b> LightAnchors array: LEDs in routers, power strips, and more, can ship data to this smartphone app	2019
<b>Hackaday</b> Modulated Pilot LightsAnchor AR to real world	2019
<b>NPR (Wesa.fm)</b> CMU Researchers Developing Tech To Help College Professors Be Better Teachers	2019
<b>TechXplore</b> , EduSense: Researchers develop comprehensive classroom sensing system	2019
<b>New Atlas</b> Computer vision system tracks instructors' performance	2019
<b>Display Daily</b> MeCap Can Add Low Cost Whole Body Digitization to VR/AR Headsets	2019
<b>ACM Technews</b> GymCam Tracks Exercises That Wearable Monitors Cannot	2019
<b>Market Research Finance</b> GymCam Counts Your Reps And Sets Just Like A Personal Trainer	2019
<b>I-programmer</b> GymCam Tracks Your Workout	2019
<b>Medgadget</b> GymCam Automatically Classifies, Counts Exercise Reps	2019
<b>ZDnet</b> This camera watches while you work out	2019
<b>Hackaday</b> GymCam knows exactly what you've been doing in the gym	2019

<b>New Atlas</b> Computer vision system tracks workouts when wearables can't	2019
<b>Engadget</b> Speculative gadgets at the Future Interfaces Group	2018
<b>TechCrunch</b> This robot uses lasers to 'listen' to its environment	2018
<b>The Register (UK)</b> Alexa heard what you did last summer- AI Recognizes Activities from Sound	2018
<b>Science Daily</b> Sound, Vibration Recognition Boost Context-Aware Computing	2018
<b>Futurity</b> Sound and Vibrations Let Smart Devices Know Where They Are	2018