Nhan (Nathan) Tran

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Education

- **Cornell University** *August 2022 - Current*
  - Ph.D., **Computer Science** (4.1/4.0 GPA). Adviser: Abe Davis.
  - Current Research Interests: human-computer interaction, mobile sensing and healthcare, AR/VR
  - Thesis Proposal: *Mobile Computational Photography: Interactive Systems for Domain-Specific Data Capture*
  - Thesis Committee: Abe Davis, Deborah Estrin, Jeffrey Palmer

- **Colorado School of Mines** *August 2014 - May 2020*
  - M.S. and B.S., **Computer Science + Robotics and Intelligent Systems** (3.9/4.0 GPA)
  - Masters Thesis: *Exploring Mixed Reality Robot Communication Under Different Types of Mental Workload*

Publications

- **Nhan Tran**, Ethan Yang, Abe Davis. *ARticulate: Interactive Visual Guidance for Demonstrated Rotational Degrees of Freedom in Mobile AR.* ACM CHI Conference on Human Factors in Computing Systems (CHI 2025).
- **Nhan Tran**, Ethan Yang, Angelique Taylor, Abe Davis. *Personal Time-Lapse.* 37th Annual ACM Symposium on User Interface Software and Technology. (UIST 2024).
  - Patent-pending, free iOS app with potential applications in telehealth for documenting long-term bodily changes. Users in 14 countries: **MeCapture.com**. Featured in press coverage.
- **Nhan Tran**, Trevor Grant, Thao Phung, Leanne Hirshfield, Christopher Wickens, Tom Williams. *Now Look Here! Mixed Reality Improves Robot Communication Without Cognitive Overload.* 25th International Conference on Human-Computer Interaction (HCII 2023).
- Landon Brown, Jared Hamilton, Zhao Han, Albert Phan, Thao Phung, Eric Hansen, **Nhan Tran**, Tom Williams. *Best of Both Worlds? Combining Different Forms of Mixed Reality Deictic Gestures.* ACM Transactions on Human-Robot Interaction (THRI 2022).
- Jared Hamilton and Thao Phung and **Nhan Tran** and Tom Williams. *What's The Point? Tradeoffs Between Effectiveness and Social Perception When Using Mixed Reality to Enhance Gesturally Limited Robots.* 16th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2021).
- Tom Williams and Matthew Bussing and Sebastian Cabrol and Elizabeth Boyle and **Nhan Tran**. *Mixed Reality Deictic Gesture for Multi-Modal Robot Communication.* 14th ACM IEEE International Conference on Human Robot Interaction (HRI 2019)
- Tom Williams, **Nhan Tran**, Josh Rands, Neil T. Dantam . *Augmented, Mixed, and Virtual Reality Enabling of Robot Deixis.* 10th International Conference on Virtual, Augmented and Mixed Reality (VAMR 2018).

Invited Talks and Presentations

- Oral presentation at CHI 2025 conference May 2025
- Finalist at Cornell's Annual Eastman-Rice Persuasive Debate Contest April 2025
- Invited Lightning Talk speaker at New York City Computer Vision Day February 2025
- Invited speaker at Cornell Tech XR Monthly Seminar (Faculty Host: Harald Haraldsson) January 2025
- Invited speaker at Princeton Vision & Graphics Seminar (Faculty Host: Adam Finkelstein) November 2024

- Finalist at Three Minute Thesis (3MT) Competition, Harvard Engineering's Ivy Symposium — October 2024
- Oral presentation at UIST 2024 conference — October 2024
- Oral presentation at HCII 2023 conference — August 2023

Research experience

- **Adobe** — *Research Scientist Intern, May 2025 - August 2025*
  - Researching computational video editing under mentorship of Dr. Mackenzie Leake and Dr. Valentina Shin.
- **Cornell University** — *PhD Student Researcher, August 2022 - Current*
  - Researching HCI, AR/VR, and mobile computational photography with Prof. Abe Davis; published papers at UIST and CHI.
- **Robust AI** — *Research Intern, June 2020 - September 2020*
  - Researched augmented reality and human-robot interaction with Dr. Alex Trevor and Dr. Crystal Chao.
- **Mines Interactive Robotics Research Lab** — *Research Assistant and Project Lead, 2017 - 2020*
  - Researched AR/VR and human-robot interaction with Prof. Tom Williams; published papers at HRI.

Work experience (selected)

- **Robust AI** — *Software Engineer, Robot Perception, June 2020 - August 2022*
  - Developed robot perception systems (obstacle avoidance, object detection, monocular depth estimation model).
  - Built simulation and visualization tools that allow rapid iteration of robotic development and sensor inspection.
- **Facebook** — *Production Engineer Intern, May 2019 - August 2019*
  - Saved team from capacity overloads by building automation tools that analyze historical data and control the sampling rates of machine learning experiments. Received a return full-time offer.
- **NASA-Caltech Jet Propulsion Laboratory** — *Software Intern (Web/Full-stack), June 2018 - August 2018*
  - Researched and resolved bottlenecks in Mars 2020 Rover's Sampling and Caching Subsystem's cleaning process.
  - Reduced 50% lead time by designing an assembly tracking system to optimize operations workflows.
- **Google Nest** — *Software Engineering Intern, May 2017 - August 2017*
  - Reduced man-hours by 90% by developing a visualization tool for internal robots to automate product testing.

Service

- Reviewer, ACM CHI Conference on Human Factors in Computing Systems (2025)
- Mentor and Panelist, Cornell Bowers CIS undergraduate research program (BURE 2023, 2024)
- Student Volunteer, Cornell Computer Science Visit Days (2023, 2024, 2025)
- Reviewer, ACM/IEEE International Conference on Human-Robot Interaction (2021, 2022)
- Web chair, ACM/IEEE International Conference on Human-Robot Interaction (2021)
- Publicity chair, Human-Robot Interaction Pioneers Workshop at HRI 2021 (2021)
- Scholarship reviewer, Greenhouse Scholars (2020)
- Student Outreach Workshop organizer, AAAI Conference on Artificial Intelligence (2018, 2019)

Teaching experience

- **Cornell University** *Graduate Teaching Assistant, Fall 2022, Spring 2023*
  - Spring 2023: CS4670 Computer Vision with 350+ students.
  - Fall 2022: CS2110 Data Structures, one of Cornell's largest computer science courses with 700+ students.

Filmography

Beyond my research, I've cultivated filmmaking skills through Cornell's Cinematography program, serving in various roles from director to cinematographer. These creative experiences directly inform my research on improving tools and workflows for content creators. Student productions:

- Für Elise (Short Film), self-directed — Writer and Director, 2024
- Earworm (Short Film) directed by Jake Walter — First Assistant Camera, 2024
- Silence (Music Video) directed by Katherine Xu — First Assistant Camera, 2024
- 50/50 (Short Film) directed by Justin Lee — Director of Photography, 2024
- Premeditated (48 Hour Filmmaking competition) directed by Katherine Xu — Lighting/Gaffer, 2024
- The Tiny Explorer (Short Film), co-directed with Waki Kamino and Peter Wu — Actor and Co-Director, 2023
- My Robot (Short Film), self-directed — Writer and Director, 2023
- Facade (Short Film) directed by Krisha Jivani — Director of Photography, 2023
- Class Crush (Music Video) directed by Katherine Xu — Production Assistant, 2023