

# Junhan (Judy) Kong

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## EDUCATION

**Carnegie Mellon University**, Pittsburgh PA May 2019 - May 2020  
Master of Science in Computer Science (with Research Thesis), *GPA 4.00/4.33*  
**Advisor: Prof. Jeffrey Bigham**

**Carnegie Mellon University**, Pittsburgh PA Aug 2015 - May 2019  
Bachelor of Science in Computer Science, *GPA 3.69/4.0*  
Additional Major in Human-Computer Interaction; Minor in Machine Learning and Statistics

## PUBLICATIONS

**Junhan Kong**, Anhong Guo, Jeffrey P. Bigham. "Supporting Older Adults in Using Complex User Interfaces with Augmented Reality.", In *Extended Abstracts of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2019)*. Pittsburgh, PA. DOI: 10.1145/3332165.3347873.

Anhong Guo, **Junhan Kong**, Michael Rivera, Jeffrey P. Bigham. "StateLens: A Reverse Engineering Solution to Making Existing Dynamic Touchscreens Accessible.", In *Proceedings of the 32nd Annual ACM Symposium on User Interface Software & Technology (UIST 2019)*. New Orleans, LA. DOI: 10.1145/3308561.3354593.

## RESEARCH EXPERIENCE

**Graduate Research Assistant, CMU HCII (Advisor: Prof. Jeffrey Bigham)** May 2019 - Present  
*Supporting Older Adults in Using Complex User Interfaces with Augmented Reality*

- Developing authoring tool to create AR user manuals with low cognitive load.
- Proposed modeling of tasks as *actions sequences* of unique *states* identifiable by computer vision and *actions* that trigger state transitions; Designed mapping from input *actions* to AR guidance.
- Presented [demo](#) at **ASSETS 2019** and working on paper submission.

*VizLens++: An Interactive Smartphone App for the Blind*

- Developing iOS app with a computer vision-crowdsourcing pipeline to help visually impaired users use physical interfaces and collect data on their interaction patterns.
- Exploring tangibles and other modalities of feedback for visually impaired users.

**Undergraduate Research Assistant, CMU HCII (Advisor: Prof. Jeffrey Bigham)** Sep 2017 - May 2019  
*StateLens: A Reverse Engineering Solution for Making Existing Dynamic Touchscreens Accessible*

- Ideated *state diagram* modeling of interfaces as state machines containing interaction point info.
- Designed and implemented computer vision pipeline of StateLens that dynamically construct *state diagrams* from point-of-view videos; participated in prototyping 3D printed capacitive accessories.
- Co-authored [paper](#) published at **UIST 2019**.

**UPMC Post-Operative Care Assistant Capstone Project** Jan 2019 - May 2019  
**(Advisor: Prof. Karen Berntsen and Prof. Vincent Aleven)**

- Conducted extensive user research on post-operative care and technology use of older adults through contextual inquiry and interviews.
- Designed the Hebo 2.0 app for post-operative care of Mohr's surgery at UPMC.

## TEACHING EXPERIENCE

**Teaching Assistant, CMU 05-391 Designing Human-Centered Software** Aug 2017 - Present  
(Instructor: Prof. Chris Harrison)

Provide support and feedback on group projects and homework; Help refine course design.

**Teaching Assistant, CMU 15-122 Principles of Imperative Computation** Aug 2016 - Present  
(Instructor: Prof. Iliano Cervesato)

Lead weekly labs and recitations; Hold weekly office hours to answer student questions; Grade homework and exams; Provide feedback for course improvement.

## WORK EXPERIENCE

**Software Engineering Intern, Google** May - Aug 2018

Designed and implemented a benchmark automation platform that continuously runs microbenchmarks in full isolation, collects results, visualizes performance trend over time and detects regression.

**Software Engineering and Data Science Intern, Jet.com** Jun - Aug 2017

Designed and implemented an automatic machine learning analytics pipeline to gather information from customer service calls and emails; used ML and NLP tools to perform speech recognition, text mining and relevant product detection, then auto-generate analytics data and store in SQL database.

## AWARDS AND HONORS

**The Boeing Blue Skies Award: Game Changer** May 2019

For the StateLens project presented at Meeting of the Minds CMU Undergrad Research Symposium

**University Honors** for academic excellence, Carnegie Mellon University May 2019

**TartanHacks 2017: Best Educational App** Feb 2017

**TartanHacks 2016: Social Impact Prize** Feb 2016

**Dean's List**, School of Computer Science, Carnegie Mellon University

*Fall 2015, Spring 2017, Fall 2017, Spring 2018, Fall 2018*

## SERVICE AND ACTIVITIES

**BHCI Student Advisory Committee** Sep 2018 - May 2019

Provide feedback on CMU BHCI (Bachelor of Human-Computer Interaction) program; collaboratively designed and launched BHCI seminar course 05-300 Undergraduate Pro Seminar.

**Undergraduate Orientation Counselor** Aug 2018

Facilitated and led activities and discussions for first-year students during orientation week; worked with house fellows and residential staff in residential community building.

## SKILLS

**Programming Languages:** Python, C++, C, Java, Swift, Objective C, C#, F#, JavaScript, R, SQL

**Tools and Platforms:** Git, Unity, TensorFlow, AWS, OpenCV, CUDA, OpenMP, Hadoop, Spark

**User-Centered Research:** contextual inquiry, heuristic evaluation, affinity diagramming, storyboarding and speed dating, surveys and interviews

**Hardware Prototyping & Fabrication:** Processing, Arduino, PCB design, 3D printing