

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

RESEARCH EXPERIENCE

CMU Human-Computer Interaction Institute, Accessibility Lab

May 2019 - Present

Graduate Student Researcher (Advisor: Prof. Jeffrey Bigham)

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.

CMU Human-Computer Interaction Institute, Accessibility Lab

Sep 2017 - May 2019

Undergraduate Research Assistant (Advisor: Prof. Jeffrey Bigham)

[StateLens](#): A Reverse Engineering Solution for Making Existing Dynamic Touchscreens Accessible

- Worked on designing, building and iterating on the StateLens system to help visually impaired users use dynamic touchscreen interfaces.
- Ideated modeling of dynamic touchscreen interfaces as *state diagrams*, which represents screen transitions as a state machine and record user interaction information on the edges.
- Designed and implemented the computer vision pipeline of StateLens that dynamically construct *state diagrams* from point-of-view videos.
- Conducted technical evaluations and user studies for paper submission.
- Co-authored [paper](#) published at **UIST 2019** and presented work at Meeting of the Minds CMU Undergrad Research Symposium 2019

UPMC Post-Operative Care Assistant Capstone Project

Jan 2019 - May 2019

Team member, Tech Lead (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.

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.

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	

TEACHING EXPERIENCE

CMU 05-391 Designing Human-Centered Software	Aug 2017 - Present
Teaching Assistant (Instructor: Prof. Chris Harrison)	
Help students with course projects; Grade and provide feedback on projects and homework.	

CMU 15-122 Principles of Imperative Computation	Aug 2016 - Present
Teaching Assistant (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.	

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.	

Undergraduate Student Senate

Sep 2015 - May 2016

Member of Academic Affairs Committee; collaboratively organized Student-Faculty Lunches.

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