

Christina (Young Mi) Choi, Ph.D.

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I. Earned Degrees

- Ph.D. Industrial Design, Georgia Institute of Technology, Atlanta, Georgia (2004-2009)
Major emphasis: New Product Innovation, Assistive Technology, Universal Design, Human Factors/Ergonomics and User Needs/Usability

Minor emphasis: Marketing Management

Dissertation: “*The Impact of Input during the Design of an Assistive Technology Product*”

Advisor: Trained under a multidisciplinary program with Stephen H. Sprigle, Ph.D., PT Professor of Bioengineering and Applied Physiology at Georgia Tech and Director of the Rehabilitation Engineering and Applied Research (REAR) Lab
- M.Sc. Industrial Design, Georgia Institute of Technology, Atlanta, Georgia (2001-2002)
MID Industrial Design, Sook-Myung Women’s University, Seoul, Korea (1998-2000)
BFA Industrial Design, Sook-Myung Women’s University, Seoul Korea (1994-1998)

II. Employment History

Georgia Institute of Technology, Atlanta, Georgia

- Assistant Professor (Tenure track), School of Industrial Design : May 2012 - Present
- Human-Computer Interaction, Master of Science Program (MS-HCI) faculty member : 2013 - Present
- Visiting Assistant Professor, School of Industrial Design : May 2010 - May 2012

Center for Assistive Technology and Environmental Access (CATEA) at Georgia Tech, Atlanta, Georgia

- Graduate Research Scientist : Fall 2004 - August 2010

Time & Space Tech, Seoul, South Korea

- Marketing Associate & Coordinator : February 2000 - August 2000
- Marketing Intern & Part-time Employee : January 1998 - February 2000

III. Honors and Awards

Outstanding Faculty Award, College of Architecture, 2015

Recognizes outstanding achievement in the areas of teaching, scholarship, creative activity, and service by a tenured or tenure-track faculty member. It is given to one who has made significant contributions to the College in one or more of these areas that have brought recognition to the faculty member and School.

President’s Scholars Mentoring Program (PSMP) - Favorite professor recognition, Spring 2014

Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) - Class of 1934

Teaching Effectiveness Award, 2012

Faculty receiving this award had a response rate of at least 85 percent to the Course-Instructor Opinion Survey and had teaching effectiveness scores of 4.8/5.0 in classes that were at least 40 students in size or scores of 4.9/5.0 in classes that were at least 15 students in size.

Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) - "Thank a Teacher" honor, Industrial Design, Fall 2012

Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) - "Thank a Teacher" honor, Industrial Design, Spring 2012

Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) - "Thank a Teacher" honor, Mechanical Engineering, Fall 2011

Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) - "Thank a Teacher" honor, Industrial Design, Spring 2011

Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) - "Thank a Teacher" honor, Industrial Design, Fall 2010

South Korea national technical qualification holder of Industrial Engineer Product Design
Qualification Certificate Number: 97408010039G

IV. Research, Scholarship, and Creative Activities

A. Published Books, Book Chapters, and Edited Volumes

A1. Refereed Book Chapters

Choi, Y.M. (2015). User Capabilities vs. Device Task Demands in a Tape Dispenser Product for Persons with Limited Dexterity. *Inclusive Designing: Joining Usability, Accessibility, and Inclusion*. Eds: Langdon, P.M., Lazar, J., Heylighen, A., Dong, H. London, Springer.

Choi, Y.M., D. Sabata, et al. (2008). Building a Consumer Network to Engage Users with Disabilities. *Designing Inclusive Futures*. Eds: Langdon, P.M., Callahan, J., Robinson, P. London, Springer.

B. Refereed Publications and Submitted Articles

B1. Published and Accepted Journal Articles

Choi, Y.M., Eiring, S., Ghovanloo, M. (2014). "Privacy in Medication Adherence and Personal Emergency Response Systems" *International Journal of Design and Society*. 8(2), 17-23.

Choi, Y.M. (2014). "The Costs and Benefits of User Input in the Design Process: A Practical Guide for Assistive Technology Device" *Archives of Design Research*. 27(3), 17-35.

Choi, Y.M., Ghovanloo, M. (2013). "Challenges to a Persistent Medication Adherence Monitoring System for Seniors" *Journal of Neuroscience and Neuroengineering*. 2(3), 1-5.

Choi, Y.M. (2011). "Managing Input During Assistive Technology Product Design." *Assistive Technology*, 23(2), 65-75.

Choi, Y.M., Sprigle S. (2011). "Approaches for Evaluating Usability of AT Product Prototypes." *Assistive Technology*, 23(1), 36-41.

B2. Conference Presentation with Proceedings (Refereed)

Wu, S., Choi, Y.M. (2015). "Utilizing Smart Phones to Improve the Effectiveness of University Students' Collaborative Work" *The 17th International Conference on Engineering & Product Design Education (E&PDE 2015)*. Loughborough, UK, September 3-4, 2015.

Choi, Y.M., Mittal, S. (2015). "Exploring Benefits of Using Augmented Reality for Usability" *International Conference on Engineering Design (ICED15)*. Milan, Italy, July 27-30, 2015.

- Choi, Y.M., Wu, X., Ghovanloo, M. (2015). "Design, fabricate and test a necklace to improve medication compliance in elderly persons" Human Computer Interaction (HCI) International. Los Angeles, CA. August 2-7, 2015.
- Zhang, X., Choi, Y.M. (2015). "Applying Tangible Augmented Reality in Usability Evaluation" Human Computer Interaction (HCI) International. Los Angeles, CA. August 2-7, 2015.
- Zhang, L., Choi, Y.M. (2015). "A Study the Interactive Application in Aquarium Exhibit" Human Computer Interaction (HCI) International. Los Angeles, CA. August 2-7, 2015.
- Li, M., Choi, Y.M. (2015). "An Exploration of Mobile Collaborative Authoring Solutions" Human Computer Interaction (HCI) International. Los Angeles, CA. August 2-7, 2015.
- Yang, T., Choi, Y.M. (2015). "Study on The Design Characteristics of Head Mounted Displays (HMD) For Use in Guided Repair and Maintenance" Human Computer Interaction (HCI) International. Los Angeles, CA. August 2-7, 2015.
- Li, J., Choi, Y.M. (2015). "Comparing and Exploring New Text Entry and Edit Methods for Smart TV " Human Computer Interaction (HCI) International. Los Angeles, CA. August 2-7, 2015.
- Choi, Y.M. (2015). "Comparison of Grip and Pinch Strength in Adults with Dexterity Limitations to Normative Values" 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015). Las Vegas, NV. July 26-30, 2015.
- Wu, X., Choi, Y.M. (2014). Testing the cognitive load of gesture interaction on drivers when performing tertiary tasks. 5th International Conference on Applied Human Factors and Ergonomics (AHFE 2014). Krakow, Poland, July 19-23, 2014.
- Purdy, T., Choi, Y.M. (2014). Enhancing Augmented Reality for Use in Product Design. ACM CHI Conference on Human Factors in Computing Systems. Toronto, Canada, April 26-May 1, 2014. Accept rate 23%.
- Zhang, L., Choi, Y.M. (2014). Study of Fabrication Methods and Design Outcomes. International Conference on Design Principles and Practices. Vancouver, Canada, January 16-18, 2014. Accept rate 29%.
- Eiring, S., Choi, Y.M., Ghovanloo, M. (2014). Privacy in Medication Adherence and Personal Emergency Response Systems. International Conference on Design Principles and Practices. Vancouver, Canada, January 16-18, 2014. Accept rate 29%.
- Gonzalez, E., Jones, A., Harley, L., Choi, Y.M., Burnham, D., Fausset, C., Fain, B., Ghovanloo, M. (2013). Older Adults' Opinions About Wearable Health Technologies. Gerontological Society of America, 66th Annual Scientific Meeting. New Orleans, Louisiana, November 20-24, 2013.
- Wilson, W., Choi, Y.M. (2013). "Improving Multi-Disciplinary Design Education in Sponsored Studio Projects". Industrial Design Society of America (IDSA) International Conference. Chicago, IL, August 21-24, 2013.
- Wu, X., Choi, Y.M. (2013). "Design and Testing of a New Medical Rail-adapter Product." International Conference on Engineering Design (ICED13). Seoul, South Korea, August 19-22, 2013.
- Gong, Y., Hao, H., Choi, Y.M. (2013). "Improving Management of Medical Equipment." HCI International 2012. Las Vegas, Nevada, July 21-26, 2013.
- Choi, Y.M., Olubanjo, T., Farajidavar, A., Ghovanloo, M. (2013). Potential Barriers in Adoption of a Medication Compliance Neckwear by Elderly Population. International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS13). Osaka, Japan, July 3-7, 2013.
- A.R. Jones, D.F. Miranda, Y.S. Choo, J.A. Guerra, J. Chapman, Y.M. Choi, C.R. Forest, Umbrella valve design for intravenous fluid delivery system, Proceedings of the Biomedical Engineering Society (BMES) 2012 Annual Meeting, pp. P-Sat-B-185, Atlanta, GA, October 24-27, 2012.
- Choi, Y.M. (2011). "Identifying New Design Problems: Observations from Senior Undergraduates." The 14th International Conference on Engineering & Product Design Education (E&PDE 2012). Antwerp, Belgium. September 6-7, 2012.

- Choi, Y.M. (2011). "Effective Scheduling of User Input During the Design Process." 18th International Conference on Engineering Design (ICED11). Copenhagen, Denmark. August 15-18, 2011.
- Choi, Y.M. and Sprigle, S. (2008). "The When of User Engagement". Cambridge Workshop on Universal Access and Assistive Technology (CWUAAT), Cambridge, UK. April 14-16, 2008.
- Choi, Y.M. (2007). "Portable Ramp Usage of Wheeled Mobility Users". RESNA 2007, Phoenix, Arizona. June 18-20, 2007.

B3. Other Refereed Material

B4. Submitted Journal Articles (with date of submission)

- Choi, Y.M. (2014). "Investigating Validity of Stakeholder Input in Product Design" Design Studies. Submitted October 31, 2014

C. Other Publications and Creative Products

Adhere 2 Care, Atlanta, Georgia
New Product Development Consultant - July 2011 - Present

Global Center for Medical Innovation (GCMI), Atlanta, Georgia
New Product Development Consultant - 2012 - 2013

D. Presentations

- Choi, Y.M. (2015). "Meeting Non-technical needs in the Design of Assistive Products" 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015). Invited Paper. Las Vegas, NV. July 26-30, 2015.
- Choi, YM (2014). "Improving Validity of Stakeholder Input in Product Design". Presentation to the GT College of Architecture Research Forum.
- Choi, YM (2014). "Approaches to improving assistive technology design methods" Presentation to the National Council on Disability
- Choi, YM (2014). "Assessing a Flipped Class in Teaching Human Factors". Celebrating Teaching Day, Georgia Institute of Technology.
- Choi, YM (2013). "The Human Factor in Engineering and Industrial Design Assignments". Georgia Tech Center for the Advancement of Teaching and Learning (CETL), Engaging Conversations series.
- Choi, YM (2013). "Examining Undergraduate Design Student Utilization of Research to Find Solutions to Unfamiliar Design Problems". Celebrating Teaching Day, Georgia Institute of Technology.
- Choi, YM (2013). "To Walk a Mile in Their Shoes" Georgia Tech Women's Faculty Club (GTFWC).
- Choi, Y.M. (2012). "Balance in Multidisciplinary Design Instruction." Design Engineering Workshop (DEWS) 2012. Seoul, South Korea. June 25-26, 2012.
- Choi, YM (2012). "A Product Service System to Improve Medication Adherence". Service Design Institute Seminar, Sungkyunkwan University.
- Choi, YM (2012). "Design in a Complex World". School of Design and Human Engineering, Ulsan National Institute of Science and Technology (UNIST)
- Choi, YM (2011). "Perspectives on Multidisciplinary Design." Design Science Colloquium, University of Michigan
- Choi, YM (2011). "To Walk a Mile in Their Shoes: Meeting Users in Design." Catch the Future Series, Korea Advanced Institute of Science and Technology (KAIST)

- Choi, YM (2010). "The Impact of Input During the Design of an Assistive Product". Creative Design Institute, Sungkyunkwan University.
- Choi, YM (2009). "Utilizing the Design Structure Matrix for Scheduling User Input in Product Design". School of Business, Sungkyunkwan University.
- Choi, Y.M. (2009). The Impact of Different Types of Input in the Design of Assistive Technology Products. Institute for Operations Research and the Management Sciences (INFORMS), San Diego, California. October 11-14, 2009.

E. Grants and Contracts

E1. As Principal Investigator

Title of Project: Project T3 Building Research and Design Capacity
Agency/Company: Rehabilitation Engineering Research Center (RERC) for Wireless Technologies
Role: Industrial Design Faculty Advisor
Period of Contract: Annual beginning in 2014

Title of Project: Textbook Transformation
Agency/Company: Affordable Learning Georgia (ALG)
Role: PI
Collaborator: Cathy Carpenter
Period of Contract: September 30, 2014 - June 1, 2015

Title of Project: Travel Innovation
Agency/Company: Jeju Air, South Korea
Role: PI
Period of Contract: September 15, 2014 - March 31, 2015

Title of Project: Open Academic Environment
Agency/Company: Office of Educational Technology
Role: PI
Period of Contract: August 15, 2014 - May 30, 2015

Title of Project: Open Academic Environment
Agency/Company: Office of Educational Technology
Role: PI
Period of Contract: August 15, 2015 - May 30, 2016

Title of Project: Open Innovation on Home Entertainment
Agency/Company: LG Electronics, USA
Role: PI
Period of Contract: July 1, 2014 - September 2, 2014

Title of Project: Improving Validity of Stakeholder Input in Product Design
Agency/Company: Georgia Tech Foundation
Role: PI
Period of Contract: July 1, 2013-June 30, 2014

Title of Project: Assessing a flipped class in teaching human factors
 Agency/Company: Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) -
 Class of 1969 Teaching Scholar
 Role: PI
 Period of Contract: Jan 1, 2014 - May 15, 2014

Title of Project: Utilization of research by undergraduate design students to find solutions to
 unfamiliar design problems
 Agency/Company: Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) -
 Class of 1969 Teaching Scholar
 Role: PI
 Period of Contract: Jan 1, 2013 - May 15, 2013

E2. As Co-Principal Investigator

Title of Project: Feasibility and Usability Assessment of an Intraoral Inconspicuous Control Surface
 Agency/Company: NSF
 Role: Co-PI
 Collaborators: Maysam Ghovanloo
 Period of Contract: Sept. 15, 2013 - Aug. 31, 2016

Title of Project: An Ecosystem for Objectively Monitoring and Improving Medication Adherence
 Agency/Company: IPaT-CHOA Seed Grant Program
 Role: Co-PI
 Collaborators: Maysam Ghovanloo, Mark Braunstein, Shiri Deshpande, Brandon Aylward, Roshan
 George, William Mahle
 Period of Contract: Aug. 15, 2013 - Aug. 14, 2014

V. Teaching

A. Courses Taught

Sem, Year	Course No.	Course Title
Fall, 2015	ID2021	Design Studio I
Fall, 2015	ID2320	Human Factors in Design
Fall, 2015	ECE3812	Open Academic Environment Vertically Integrated Project (VIP)
Spr, 2015	ID2022	Design Studio II
Spr, 2015	ID2320	Human Factors in Design
Spr, 2015	ECE3812	Open Academic Environment Vertically Integrated Project (VIP)
Fall,2014	ID2021	Design Studio I
Fall,2014	ID2320	Human Factors in Design
Fall,2014	ECE3812	Open Academic Environment Vertically Integrated Project (VIP)
Spr, 2014	ID2022	Design Studio II
Spr, 2014	ID2320	Human Factors in Design
Fall,2013	ID2021	Design Studio I

Fall,2013	ID6200	Graduate Studio I
Spr,2013	ID2012	Intro to Design II
Fall,2012	ID2011	Intro to Design I
Fall,2012	ID6200	Graduate Studio I
Spr,2012	ID3012	Intermediate Design II
Spr,2012	ME4182	Capstone Design
Fall,2011	ID2011	Intro to Design I
Fall,2011	ME4182	Capstone Design
Spr,2011	ID4012	Advanced Design II
Spr,2011	ID4843	Spec Topics: Hist/Theory The Human Factors
Fall,2010	ID3011	Intermediate Design I
Fall,2010	ID4201	Design/Research Methods
Fall,2010	ID6400	Master's Project

B. Individual Student Guidance

Patricia Joe (Thesis, MS-HCI program)

Thesis title: Coordinated Color Selection System

Targeted Graduation: Fall 2015

Yiwen Xhong (Thesis, MS-HCI program)

Thesis title: TBD

Targeted Graduation: Spring 2016

Menghui Li (Thesis, MID)

Thesis topic: A mobile interaction design for the Open Academic Environment (OAE)

Targeted Graduation: Spring 2016

Collaboration with the GT Office of Educational Technology

Tao (Tom) Yang (Thesis, MID)

Thesis topic: Augmented reality and wearable technologies

Graduation: Spring 2015

Jingtian (Oliver) Li (Thesis, MID)

Thesis topic: Improving interactions efficiency through wearable user interfaces

Graduation: Summer 2015

Xiaotian Zhang (Thesis, MID)

Thesis title: Applying tangible augmented reality to usability testing

Targeted Graduation: Fall 2015

Xiaolong (Shawn) Wu (Thesis, MID)

Thesis title: Combining non-contact gesture control and voice recognition control as multi-modal input to reduce the cognitive load on drivers when performing tertiary tasks

Graduation: Fall 2014

He is supported through a grant from the Open Academic Environment (OAE) Vertically Integrated Project (VIP) sponsored by Learning Excellence.

Linye Zhang (Thesis, MID)

Thesis title: A study of Fabrication Methods and Design Outcomes

Graduation: Summer 2015

Sanchit Mittal (Thesis. MID)

Thesis title: Exploring the benefits of using augmented reality for usability testing

Graduation: Spring 2014

Current position: Universal Electronics, Orange County, CA

Service on Thesis or Dissertation Committees

Heather Humphries (committee member)

Dissertation topic: Caretaker-Machine Collaborative Manipulation with an Advanced Hydraulically Actuated Patient Transfer Assist Device

Mechanical Engineering Ph.D.

Christina Harrington (committee member)

Comprehensive Exam: Scheduled Spring 2015

Dissertation topic: Technologies for healthy aging in the home

Industrial Design Ph.D.

C. Other Teaching Activities

Human-Computer Interaction, Master of Science Program (MS-HCI) faculty member : 2013 - Present

Yida Gong and Yu (Hannah) Hao

Project: Improving Management of Medical Equipment

I am not advising these master students, but did supervise this project with them. They wrote a paper based on the results. It was submitted and accepted to the HCI International 2013 conference.

Redesigned the sophomore ID studio curriculum over the summer of 2012

Developed the current Human Factors in Design class - This is an introductory class in human factors with a focus on how it is used in design. This class was an elective when I first taught it but is now required for ID majors and minors. It also has been a highly multidisciplinary class, including students from other schools, such as engineering and computer science.

Philips sponsored project

Redesign pulse oximeter device for Philips Healthcare. This was conducted as a class project in the Junior year ID studio.

Material 6 sponsored project

Packaging design for iPhone case product. This was conducted as a class project in the Sophomore year ID studio.

Wireless RERC (Rehabilitation Engineering Research Center) sponsored project

Universal design of wireless technology devices. Sophomore and junior class project

(<http://www.wirelessrerc.gatech.edu/node/575>)

LifeSpan sponsored project

Design of a medical equipment mounting rail for use in emergency room environments. Graduate project.

The Open Academic Environment VIP team

This project is an open-source, multi-institutional software development project to create a collaborative platform that supports globally networked learning and scholarship. The outcome of this project will produce an international service for academic collaboration.

VI. Service

A. Professional Contributions

Grant Reviewer:

- NSF/NIH Smart and Connected Health (SCH) review panelist, 2014

Journal Reviewer:

- Assistive Technology Journal, 2013
- Journal of Rehabilitation Research and Development (JRRD), 2013

Conference Reviewer:

- E&PDE '15 (Engineering and Product Design Education Conference), 2015
- ICED 2015 (International Conference on Engineering Design), 2015
- PETRA 2015 (International Conference on Pervasive Technologies Related to Assistive Environments), 2015
- DESIGN 2014 Conference Scientific Advisory Board, 2014
- IDED13 (International Conference on Engineering Design), 2013
- UKC13 (US-Korea Conference on Science, Technology and Entrepreneurship), 2013

Committees:

- AHFE 2015 (International Conference on Applied Human Factors and Ergonomics), Design and Applied Anthropometry Track Co-Chair
- UKC 2013 (US-Korea Conference on Science, Technology and Entrepreneurship), Industrial Engineering & Management Science, Technical group chair
- ICED13 (International Conference on Engineering Design), Asian Liaison Committee
- DEWS 2012 (Design Engineering Workshop). Design & System/Education track program committee Co-Chair.
- Institute of Packaging Professionals (IoPP) SE Chapter Committee : 2013

B. Public and Community Service

Drew Charter School design career day outreach speaker: 2013, 2014

C. Institute Contributions

- GTFWC (Georgia Tech Faculty Women's Club), Scholarship Committee Chair: 2015-2016
- Georgia Tech Center for the Enhancement of Teaching and Learning (CETL) CRIDC (Career, Research, Innovation and Development Conference). Navigating the Transition to U.S. Faculty Position: Advice for International Scholars panelist: 2015
- Georgia Tech President's Scholarship Weekend Interviewer: 2015
- Georgia Tech Faculty Women's Club (GTFWC) Scholarship Committee : 2014, 2015
- Industrial Design Faculty Search Committee: 2013, 2014
- Master of Industrial Design (MID) application review: 2012, 2013, 2014, 2015
- Commencement representative: Fall 2012, Spring 2013
- Industrial Design master student admission reviewer: 2012, 2013, 2014

- Dean's Strategic Planning Committee - Undergraduate Curriculum & Enrollment Committee : 2013-2014
- Korean Industrial Design Students (KIDS)- Founded new SGA organization: 2014
- College standing committee on Diversity : 2012-present
- Mechanical Engineering capstone design expo judge : 2011-2014
- GT-IDS (Georgia Tech Industrial Design Society of America) Merit Award judge : 2011-2014
- Aided in organizing the "Have a Seat" chair show exhibition at the Ferst Center which featured chairs designed in my sophomore studio class: Spring 2013
- Georgia Tech Women's Faculty Club (GTFWC) Spring Luncheon technology display (presentation): 2013