

YOUNGWOOK DO

Technology Square Research Building (TSRB) Second Floor, 85 5th Street NW, Atlanta, GA 30308
youngwookdo@gatech.edu, <https://www.youngwookdo.me/>

RESEARCH INTERESTS

My research focus is to design novel user interfaces that encourage better cybersecurity behaviors and help end-users have control over data collection by sensors deployed in everyday physical environments. I leverage the natural affordances of physical objects and materials for conveying abstract digital information.

My research revolves around the intersection of tangible user interfaces, usable security and privacy, and novel computational materials that exhibit computational functionalities including physical actuation, sensing, and communication.

EDUCATION

Georgia Institute of Technology, Atlanta, GA

Aug 2018 – May 2023

PhD Student, School of Interactive Computing

GT SPUD Lab/Ubicom Group. Advisor: Gregory D. Abowd and Sauvik Das

Carnegie Mellon University, Pittsburgh, PA

Dec 2016

Master of Science, Electrical and Computer Engineering

Yonsei University, Seoul, Korea

Feb 2015

Bachelor of Science, Electrical and Electronic Engineering

Magna Cum Laude

PUBLICATIONS **Conference and Journal Publications**

- [P13] Yannier, N., Crowley, K., **Do, Y.**, Hudson, S.E. and Koedinger, K.R., 2022. Intelligent science exhibits: Transforming hands-on exhibits into mixed-reality learning experiences. *Journal of the Learning Sciences*, pp.1-34. [DOI]
- [P12] Zhang, D., Fuentes-Hernandez, C., Vijayan, R., Zhang, Y., Li, Y., Park, J.W., Wang, Y., Zhao, Y., Arora, N., Mirzazadeh, A., **Do, Y.**, Cheng, T., Swaminathan, S., Starner, T., Andrew, T.L. and Abowd, G.D., 2022. Flexible computational photodetectors for self-powered activity sensing. *npj Flexible Electronics*, 6(1), pp.1-8. [DOI]
- [P11] **Do, Y.**, Park, J.W., Wu, Y., Basu, A., Zhang, D., Abowd, G.D. and Das, S., 2021. Smart Webcam Cover: Exploring the Design of an Intelligent Webcam Cover to Improve Usability and Trust. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 5(4), pp.1-21. [ACM DL]
- [P10] **Do, Y.***, Singh, S.*, Li, Z., Craig, S.R., Welch, P.J., Shi, C., Starner, T., Abowd, G.D. and Das, S., 2021, October. Bit Whisperer: Improving Access Control over Ad-hoc, Short-range, Wireless Communications via Surface-bound Acoustics. In Proceedings of the 34th ACM User Interface Software and Technology Symposium (UIST). (*Contributed Equally) [ACM DL]
- [P9] Cheng, T., Li, B., Zhang, Y., Li, Y., Ramey, C., Jung, E.M., Cui, Y., Swaminathan, S.G., **Do, Y.**, Tentzeris, M. and Abowd, G.D., 2021. Duco: Autonomous Large-Scale Direct-Circuit-Writing (DCW) on Vertical Everyday Surfaces Using A Scalable Hanging Plotter. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 5(3), pp.1-25. [ACM DL]
- [P8] **Do, Y.**, Hoang, L.T., Park, J.W., Abowd, G.D. and Das, S., 2021, June. Spidey Sense: Designing Wrist-Mounted Affective Haptics for Communicating Cybersecurity Warnings. In Designing Interactive Systems Conference 2021 (pp. 125-137). [ACM DL]
- [P7] Tao, Y., Lee, Y.C., Liu, H., Zhang, X., Cui, J., Mondoa, C., Babaei, M., Santillan, J., Wang, G., Luo, D., Liu, D., Yang, H., **Do, Y.**, Sun, L. Wang, W., Zhang, T. and Yao, L., 2021. Morphing pasta and beyond. *Science Advances*, 7(19), p.eabf4098. [DOI]
- [P6] Cheng, T.*, Narumi, K.*, **Do, Y.**, Zhang, Y., Ta, T.D., Sasatani, T., Markvicka, E., Kawahara, Y., Yao, L., Abowd, G.D. and Oh, H., 2020. Silver Tape: Inkjet-Printed Circuits Peeled-and-Transferred on Versatile Substrates. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 4(1), pp.1-17. (*Contributed Equally) [ACM DL]

[P5] Chen, C., Howard, D., Zhang, S.L., **Do, Y.**, Sun, S., Cheng, T., Wang, Z.L., Abowd, G.D. and Oh, H., 2020, February. SPIN (Self-powered Paper Interfaces) Bridging Triboelectric Nanogenerator with Folding Paper Creases. In Proceedings of the Fourteenth International Conference on Tangible, Embedded, and Embodied Interaction (pp. 431-442). [ACM DL]

[P4] Tao, Y., **Do, Y.**, Yang, H., Lee, Y.C., Wang, G., Mondoa, C., Cui, J., Wang, W. and Yao, L., 2019, October. Morphlour: Personalized Flour-based Morphing Food Induced by Dehydration or Hydration Method. In Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (pp. 329-340). ACM. [ACM DL]

[P3] Forman, J., Tabb, T., **Do, Y.**, Yeh, M.H., Galvin, A. and Yao, L., 2019, April. ModiFiber: Two-Way Morphing Soft Thread Actuators for Tangible Interaction. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (p. 660). ACM. [ACM DL]

[P2] An, B.*, Tao, Y.*, Gu, J., Cheng, T., Chen, X.A., Zhang, X., Zhao, W., **Do, Y.**, Takahashi, S., Wu, H.Y. and Zhang, T., 2018, April. Thermorph: Democratizing 4D printing of self-folding materials and interfaces. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (p. 260). ACM. (* Contributed Equally) [ACM DL]

[P1] Wang, G.*, Cheng, T.*, **Do, Y.**, Yang, H., Tao, Y., Gu, J., An, B. and Yao, L., 2018, April. Printed Paper Actuator: A Low-cost Reversible Actuation and Sensing Method for Shape Changing Interfaces. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (p. 569). ACM. (* Contributed Equally) [ACM DL]

Papers in Adjunct Conference Proceedings – Posters, Demos, and Video Showcases

[Po1] **Do, Y.**, Moon, S.E. and Chang, M., 2022, April. ParaSight: Enabling Privacy-preserving Sensing Data Sharing via Device-to-device Utterance-based Communication. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts* (pp. 1-6).

[D2] Tao, Y., Gu, J., An, B., Cheng, T., Chen, X.A., Zhang, X., Zhao, W., **Do, Y.**, Zhang, T., Yao, L. 2018. Demonstrating Thermorph: Democratizing 4D Printing of Self-Folding Materials and Interfaces. In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI EA '18). ACM, New York, NY, USA.

[D1] Wang, G., **Do, Y.**, Cheng, T., Yang, H., Tao, Y., Gu, J., An, B., Yao, L. 2018. Demonstrating Printed Paper Actuator: A Low-cost Reversible Actuation and Sensing Method for Shape Changing Interfaces. In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI EA '18). ACM, New York, NY, USA.

[V1] Wang, G.*, Cheng, T.*, **Do, Y.**, Yang, H., Tao, Y., Gu, J., An, B., Yao, L. 2018. Showcasing Printed Paper Actuator: A Low-cost Reversible Actuation and Sensing Method for Shape Changing Interfaces. In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI EA '18). ACM, New York, NY, USA. (* Contributed Equally)

INDUSTRY RESEARCH EXPERIENCE	<p>Naver AI Lab, Seongnam, Korea <i>Summer 2021</i> Research Intern, Mentor: Minsuk Chang • Studied design implications to develop privacy-aware interactions for home activity sensing</p>
AWARDS AND HONORS	<p>IISP Cybersecurity Fellowship Winner <i>2020</i> NortonLifeLock Research Group Graduate Fellowship Finalist <i>2020</i> GVU Research Fall Showcase People’s Choice Award, First Prize <i>2019</i> Morphlour: Shape-Changing Pasta, Honorable Mention in Fast Company Innovation by Design Awards <i>2019</i> Shape Changing Pasta, Honorable Mention Award in Creative Food Cycles <i>2019</i> Printed Paper Actuator, Ars Electronica STARTS PRIZE <i>2018</i> CMHL Fellowships in Digital Health (declined due to program change) <i>2018</i></p>
PATENTS	<p>Youngwook Do, Jung Wook Park, Gregory D. Abowd and Sauvik Das. Intelligent Webcam Cover Apparatus and Method. Provisional patent application filed 63/114629. <i>2021</i></p>

GRANT	GVU Travel Grant , Georgia Institute of Technology IC Student Travel Grant , Georgia Institute of Technology	2019 2019
SCHOLARSHIPS	National Science and Engineering Undergraduate Scholarship Yonsei University Scholarship Foundation	<i>Spring 2013 - Fall 2014</i> <i>Fall 2009, Spring 2012 - Fall 2012</i>
INVITED TALKS	Improving End-user Security and Privacy via Physicalized Computing Interfaces , Cybersecurity Lecture, Institute for Information, Security & Privacy, Georgia Institute of Technology Materializing Digital Materials , Guest Lecture, Texas A&M University (Host: Dr. Jee Eun Kim)	2020 2019
SELECTED PRESS AND COVERAGE	Georgia Tech College of Computing , Wrist-Mounted System Helps Wearers Identify Cyber Threats WIRED , “Prepare to be Hypnotized by These Delicate Paper Robots” Getting Smart , “NoRILLA: Mixed Reality That Improves Learning” Getting Smart , “Montour Schools: Home of the Evolving Educators” Galileo TV , “Die Programmierten Nudeln (The Programmed Noodles)” Pittsburgh Post-Gazette , “Startups target underserved communities at AlphaLab's 2017 Demo Day”	<i>Oct 2021</i> <i>Aug 2018</i> <i>Aug 2018</i> <i>Dec 2017</i> <i>Sep 2017</i> <i>May 2017</i>
ACADEMIC SERVICES	Conference Chairing • ACM CHI 2022 LBW, Program Committee Associate Chair (AC) Reviewer • PACM IMWUT 2019, 2021 • ACM CHI 2019, 2020 LBW, 2021, 2022 • ACM UIST 2018, 2020, 2021 • ACM DIS 2021 Student Volunteer • ACM CHI 2019, 2021	
TEACHING EXPERIENCE	Teaching Assistant , Georgia Institute of Technology OMS CS6750 – Human-Computer Interaction (Graduate) Teaching Assistant , Georgia Institute of Technology OMS CS6750 – Human-Computer Interaction (Graduate)	<i>Spring 2022</i> <i>Fall 2020</i>
MISCELLANEOUS	Woog Doe (or W oog Doe), Music Producer, Seoul, Korea • Worked as a producer, a composer, a lyricist, a vocalist, and a sound engineer • Published on Spotify and iTunes, as an artist name of ‘Woog Doe’ (or ‘ W oog Doe’) Public Service, Seongnam Office of Education, Seongnam-si, Korea • Served an alternative service to Korean military service	<i>Mar 2015 - Aug 2015</i> <i>Mar 2010 - Mar 2012</i>
REFERENCES	Gregory D. Abowd , Dean of the College of Engineering, Office of the Dean Professor, Electrical and Computer Engineering, Northeastern University Sauvik Das , Assistant Professor, School of Interactive Computing, Georgia Institute of Technology Lining Yao , Assistant Professor, Human-Computer Interaction Institute, Carnegie Mellon University Nesra Yannier , CEO, NoRILLA	