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RESEARCH FIELDS

- ❑ Ergonomic Design
 - Anthropometric and biomechanical analysis for product design
 - Product design and evaluation with digital human models
 - Usability testing
- ❑ User-Centered, Innovation Product Development
 - Brain-machine interface system UI design
 - Wearable product design based on 3D human scan

EDUCATION

Period of enrolment	Department (Major)	School name	Location	Degree	Thesis title (Research field)	Advisor
09/2021 ~ Present	Industrial and Management Engineering (Human Factors)	Pohang University of Science and Technology	Pohang, South Korea	Ph.D.	Development of a Virtual Fit Analysis Method for an Ergonomic Design of Head-Wearable Products (in progress)	Prof. Heecheon You
09/2019 ~ 08/2021	Industrial and Management Engineering (Human Factors)	Pohang University of Science and Technology	Pohang, South Korea	M.S.	Analysis of Facial Deformation and Virtual Fit of Patients with Bulbar Amyotrophic Lateral Sclerosis for Ergonomic Non-Invasive Ventilation Mask Design	Prof. Heecheon You
09/2011 ~ 07/2015	School of Mechanical and Power Engineering (Safety Engineering)	East China University of Science and Technology	Shanghai, China	B.S.	Safety Evaluation of Mechanical Structures Using In-plane and Out-plane Constraints	Prof. Guozhen Wang

09/2012 ~ 07/2015	School of Art and Media (Art and Design)	East China University of Science and Technology	Shanghai, China	B.S.	Conceptual Design of Safety Device for Real- time Marine Pollution Prevention and Control	Prof. Miao Liu
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PUBLICATIONS

A. JOURNALS

A.1 INTERNATIONAL JOURNAL ARTICLES

1. Lee, A., **Cui, X.**, Jung, H., Kim, H., Jeon, E., Na, H., Kim, E., You, H. (2023). Development of Korean Representative Headforms for the Total Inward Leakage Testing on Filtering Facepiece Respirators. *Safety and Health at Work*.
2. Yun, R., Jung, H., **Cui, X.**, Huh, S., Lee, W., You, H., and Kim S. (2023). Quantitative Analysis of the Head Tilt Using Three-Dimensional Temporal Scan in Children with Torticollis. *Children*, 10(2), 225.
3. Jung, H., Kim, S.Y., **Cui, X.**, Lee, W., Kwon, D., Seo, J.W., Ko, H.Y., Kim, S.H., Yun, R.Y., You, H., and Huh, S. (2022). Postural Facial Deformation of Patients with Bulbar Amyotrophic Lateral Sclerosis and Virtual Fit of Noninvasive Ventilation Mask. *Respiratory Care*, 10055.
4. Li, M., Liu, C., **Cui, X.**, Jung, H., You, H., Feng, L., and Zhang, S. (2022). An Open-Source Real-Time Motion Correction Plug-In for Single-Photon Calcium Imaging of Head-Mounted Microscopy. *Frontiers in Neural Circuits*, 59.
5. **Cui, X.**, Jung, H., Kim, H., Li, M., Liu, C., Zhang, S., and You, H. (2022). Development of an Ergonomic User Interface Design of Calcium Imaging Processing System. *Applied Sciences*, 12(4), 1877.
6. **Cui, X.**, Jung, H., Lee, W., Kim, S., Yun, R., Kim, S., You, H., and Huh, S. (2022). Ergonomic and Personalization of Noninvasive Ventilation Masks. *Respiratory Care*, 67(1), 87-101.

A.2 KOREAN JOURNAL ARTICLES

1. Park, J., Kim, M., Jung, H., Park, C., **Cui, X.**, Lee, S., You, H. (2023). The Advancement Trend of Digital Human Modeling and Simulation. *J. of the Ergonomics Society of Korea*, 42(5), 509-521.
2. **Cui, X.**, Lee, A., Kim, H., Jeon, E. Yu, C., You, H. (2023). A Literature Review of Fit Evaluation Methods for Filtering Facepiece Respirators (FFRs). *J. of the Ergonomics Society of Korea*, 42(4), 289-304.
3. Kwon, D., Choi, Y., **Cui, X.**, Kim, M., You, H. (2021). Effects of Hand Dominance, Hand Size, and Device Size on the Grip Posture of Smartphone for Physical and Graphical User Interfaces. *J. of the Ergonomics Society of Korea*, 40(5), 259-268.

B. CONFERENCE PROCEEDINGS

B.1 INTERNATIONAL CONFERENCE PROCEEDINGS

1. Liu, C., Li, M., Wang, R., **Cui, X.**, Jung, H., Kim, H., You, H., Yang, X., Chen, W. (2021). Online Decoding System with Calcium Image from Mice Primary Motor Cortex. In *2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*. 6402-6405.

B.2 KOREAN CONFERENCE PROCEEDINGS

1. **Cui, X.**, Park, J., Lee, Y., Kim, M., You, H. (2023). Analysis of Ear-earbud Interface Features using 3D Scan Data for the Development of a Wireless Earbud Virtual Try-on System. In *Proceedings of the 2023 Fall Conference of the Ergonomics Society of Korea*.
2. Park, J., **Cui, X.**, Lee, Y., Kim, M., You, H. (2023). Development of a Usability Testing System Based on Virtual Reality for Ergonomic Product Development. In *Proceedings of the 2023 Fall Conference of the Ergonomics Society of Korea*.
3. Park, J., Kim, M., Jung, H., **Cui, X.**, You, H. (2023). Trend of Ergonomic Evaluation Based on Virtual Environments. In *Proceedings of the 2023 Spring Conference of the Ergonomics Society of Korea*.
4. **Cui, X.**, Jung, H., Yu, C., Jin, Y., Kim, Y., Kim, H., You, H. (2022). Anthropometric Analysis of 3D Head and Ear Scan Data for Ergonomic Design of Wireless Headset. In *Proceedings of the 2022 Fall Conference of the Ergonomics Society of Korea*.
5. **Cui, X.**, Lee, A., Kim, H., Jeon, E., You, H. (2022) Fit Evaluation Methods for Filtering Facepiece Respirators. In *Proceedings of the 2022 Fall Conference of the Ergonomics Society of Korea*.
6. Jung, H., Lee, W., **Cui, X.**, You, H. (2022). Literature Review of Grip Taxonomy for Dynamic 3-dimensional Hand Measurement. In *Proceedings of the 2022 Fall Conference of the Ergonomics Society of Korea*.
7. Lee, A., **Cui, X.**, Jung, H., You, H. (2022). A Study on UI/UX of Dynamic 3D Human Body Surface Measurement Software. In *Proceedings of the 2022 Fall Conference of the Ergonomics Society of Korea*.
8. Kim, H., Jung, H., **Cui, X.**, Yu, C., Lee, A., You, H. (2022). Preference Evaluation of Input Method of 3D Anthropometric Landmarks. In *Proceedings of the 2022 Fall Conference of the Ergonomics Society of Korea*.
9. **Cui, X.**, Jung, H., Kim, H., Feng, L., Yang, X., Li, M., Liu, C., Wang, R., Han, J., Zhang, S, You, H. (2022). Subjective and Objective Evaluation of the Ergonomic User Interface (UI) Design of a New Optical Brain-Machine Interface (O-BMI) System. In *Proceedings of the 2022 Spring Conference of the Ergonomics Society of Korea*.
10. **Cui, X.**, Jung, H., Kim, H., Yang, X., Feng L., Zhang, S., Li, M., Liu, C., Han, J., Wang, R., You, H. (2020). Ergonomic Development and Evaluation of UI Design for Optical Brain-Machine Interface (OBMI) System. In *Proceedings of the 2020 Fall Conference of the Ergonomics Society of Korea*.
11. Jung, H., Lee, W., **Cui, X.**, You, H. (2020). Database Establishment and Anthropometric Analysis of Template Registered Head Models of Korean. In *Proceedings of the 2020 Fall Conference of the Ergonomics Society of Korea*.
12. Jung, S., Jung, H., **Cui, X.**, Kwon, D., Huh, S., Kim, S., Kim, S., Lee, W., and You, H. (2020). Measurement and Analysis Method of Facial Dimensions Considering Characteristics of Facial Change for Patient with Neuromuscular Disease. In *Proceedings of the 2020 Fall Conference of the Ergonomics Society of Korea*.
13. **Cui, X.**, Jung, H., Lee, W., Huh, S., Kim, S-Y., Kim, S., You, H. (2020). A Literature Review on Ergonomic Issues for Design and Evaluation of Noninvasive Ventilation (NIV) Mask. In *Proceedings of the 2020 Spring Conference of the Ergonomics Society of Korea*.
14. Jung, S., Jung, H., **Cui, X.**, Kwon, D., Huh, S., Kim, S., Kim, S., Lee, W., and You, H. (2020). Comparison of Skinning Weight Derivation Methods of Digital Human Model. In *Proceedings of the 2020 Spring Conference of the Ergonomics Society of Korea*.

15. Cui, X., Jung, H., Jung, S., Hong, Y., and You, H. (2019). Benchmarking and User Needs Analysis for the UI Design of Optical Brain-Machine Interface System. *2019 Autumn Conference of the Ergonomics Society of Korea*.

Research Grants

No.	Title	Sponsor	Duration	Roll
1	Analysis of ear-earbud interface affected ANC performance of wireless earbud	LG Electronics	2023.07 ~ 2023.10	Algorithm development, 3D data analysis, product design
2	Predictive modeling of chronic obstructive pulmonary disease severity based on dynamic 3D quantitative scanning of thoracoabdominal surface	Pusan National University Yangsan Hospital	2023.03 ~ Present	Algorithm development, 3D data analysis
3	Development of international standards of 3D digital human scan data processing and analysis for standardization of human body shape information	Korea Evaluation Institute of Industrial Technology	2020.04 ~ Present	Research assistant, 3D data analysis
4	Development of headform robot for filtering facepiece respirator	National Institute of Food & Drug Safety Evaluation	2021.07 ~ 2023.05	Literature review, research assistant
5	3D dynamic human body surface shape measurement protocol development	National Research Foundation	2022.06 ~ 2022.12	SW UI design, algorithm development
6	Development and validation of usability evaluation protocol for wireless earbuds	Samsung Electronics	2022.06 ~ 2022.12	3D data analysis
7	Real-time calcium imaging for optical brain-machine interface and its application	National Research Foundation	2019.01 ~ 2021.12	Coordinator
8	Flow Physics Analysis and Evaluation of Ergonomic Usability of Hair Dryer Nozzle	LG Electronics	2022.04 ~ 2022.06	Usability test, data analysis

9	Shape analysis and design strategy for ergonomic dry eye syndrome treatment device	LG Electronics	2021.03 ~ 2021.10	Data analysis, research assistant
10	Shape analysis and design strategy for ergonomic home HIFU development	LG Electronics	2021.02 ~ 2021.06	Data analysis, research assistant
11	Development of ergonomic product shape design techniques based on the analysis of hand motion and hand deformation	National Research Foundation	2018.03 ~ 2021.02	Algorithm development, research assistant
12	Shape analysis and design guide development for wireless earbud	LG Electronics	2020.09 ~ 2020.12	Data analysis, research assistant
13	Development of beauty-care product design solutions based on anthropometric analysis	LG Electronics	2020.06 ~ 2020.09	Data analysis, research assistant
14	Development of international standards of 3D digital human scan data processing and analysis for standardization of human body shape information	Korea Evaluation Institute of Industrial Technology	2020.04 ~ Present	Research assistant

HONORS & AWARDS

Year	Award	Institute	Title
2023	Excellence Award of the 1 st Patent/Start-up/Research Topic Idea Contest	Pohang University of Science and Technology	Dynamic 3D human body dimension automation measurement and analysis technology
2019	POSCO Asia Fellowship of POSCO TJ Park Foundation	POSCO	-
2015	Honour Graduate of 2015	East China University of Science and Technology	-

WORK EXPERIENCE

Period of enrolment	Job title	Company name	Location
05/2022 ~ 08/2022	Researcher	Ergonomics Design Technology Lab, Department of Industrial and Management Engineering, Pohang University of Science and Technology	Pohang, South Korea
06/2019 ~ 08/2019	Assistant Researcher	Ergonomics Design Technology Lab, Department of Industrial and Management Engineering, Pohang University of Science and Technology	Pohang, South Korea
07/2015 ~ 05/2018	Gas Station Manager	China National Petroleum Corporation	Yuxi, China

OTHER EXPERIENCE

Period of enrolment	Experience	Institution	Location
05/2018 ~ 05/2019	Korean learning, Regular Program Level 1~4	Yonsei University Korean Language Institute, Yonsei University	Seoul, South Korea

LANGUAGE ABILITY

Language	Proficiency	Certificate
English	Upper intermediate	IELTS 6.0
Korean	Upper intermediate	TOPIK level 5
Chinese	Native speaker	-