CHANG HEE LEE PhD FRSA

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EDUCATION

Royal College of Art (RCA, 영국왕립예술대학교), London, UK

PhD *2014 - 2018*
Innovation Design Engineering, School of Design
Supervisors & Advisor: Dr. Dan Lockton, Dr. John Stevens and Professor Ashley Hall

Doctoral Thesis: Synaesthesia Materialisation: Approaches to Applying Synaesthesia as a Provocation for Generating Creative Ideas within the Context of Design

Goldsmiths, University of London, UK

MA *2012 - 2013*
Design Critical Practice, School of Design

Central Academy of Fine Arts (중앙미술학원), Beijing, China

BA *2005 – 2009*
Industrial Design, School of Design

Beijing Huijia Private School, Beijing, China
High School *2003 - 2005*
One year early graduation / Grade skipping

ACADEMIC APPOINTMENTS

KAIST (Korea Advanced Institute of Science and Technology) *September 2021 - Present*
Department of Industrial Design, College of Engineering
Director of Affective Systems and Cognition Lab
Assistant Professor (Tenure Track)

—Director of Affective Systems and Cognition lab—explores future of wellbeing, future of senses and future of creativity
—Support research and teaching undergraduate, masters and PhD students.
—Develop departmental research and curriculums.

Royal College of Art (RCA) & Imperial College London (ICL), UK *October 2018 – August 2021*
Innovation Design Engineering, School of Design (RCA) & Dyson School of Design Engineering (ICL) (** this is a dual degree program run jointly by the two above institutions*)
Tutor (Non-Tenure Track Assistant Professor)
2nd year Programme Leader

—Head of 2nd Year, overseeing all matters related to the 2nd year cohort
—Organise lectures, weekly tutorial schedules and events.
—Direct and curate exhibition spaces for the programme.
—Supervise PhD students
—Assess students' projects and thesis.
—Develop departmental research.
—Support design and technical aspects for students' projects.

—Run and coach project collaboration between RCA and CERN in Geneva.
— After moving to Korea (from August 2021), from September 2021 to the present, I have been supporting the Computer Science Research Centre (CSRC) at the Royal College of Art (RCA) as a Visiting Research Fellow to supervise PhD students.

Royal College of Art (RCA), London, UK *February 2020 – July 2020*
Design Product, School of Design
Visiting Lecturer (equivalent to US Adjunct Faculty)

—Supported tutorials-based teaching to postgraduate students.

Royal College of Art (RCA) & Imperial College London(ICL), UK *August 2016 – March 2017*
Innovation Design Engineering, School of Design (RCA) & Dyson School of Design Engineering (ICL) (** this is a dual degree program run jointly by the two above institutions*)
Visiting Lecturer (equivalent to US Adjunct Faculty) / Casual Worker—initial request was to support the team as a Visiting Lecturer but had to take the role as a Casual Worker due to VISA issues.

—Give and organise weekly tutorials to postgraduate students for the project—Grand Challenge
—Support design and technical aspects for students' projects.
—Create films for project briefs.
—Set up exhibition space.
—Record student activities.

GUEST TEACHING
Carnegie Mellon University, Pittsburgh, USA *April 2017*
Guest Instructor, School of Design

—Syllabus: Spring 2017: Environments Studio IV: The Invisible

(Workshop: creating robots using synaesthesia as provocation)

HONORS / NOMINATIONS / AWARDS

Faculty Award, KAIST, Daejeon, Korea *2023*
International Cooperation Award

Nominated by the Royal Society of Arts (RSA), London, UK *2020*
Fellow (Invited) of the Royal Society of Arts (FRSA)

Awarded by ACM SIGCHI Designing Interactive Systems (DIS 2018), Hong Kong *2018*
Best Provocation Award (Top 2%)—DIS 2018, PWIP

Nominated by Overseas Korean Foundation (OKF), Seoul, South Korea *2016*
Korean Future Leader

Nominated by UK Design Council, London, UK *2015*
70 Ones To Watch - 70 emerging design talent that will shape UK's design future.

Nominated by Daum Media, Seoul, South Korea *2015*
Today's Figure

Awarded by <u>International Design Award (IDA)</u>, Los Angeles, USA *2014*
Silver Prize

Awarded by <u>A'Design Award</u>, Milan, Italy *2013*
Bronze A'Design Award

TALKS

ACM SIGCHI Local Chapter, Seoul, Korea *July 2022*
Invited by the ACM SIGCHI Local Chapter event held at, University of Seoul

Design Research Society (DRS) panellist, Bilbao, Spain *June 2022*
Design Research Society (DRS) PhD committee as a panellist

Imperial College London & Royal College of Art, London, UK *May 2022*
Keynote Series | HCI DESIGN:Products, space travel, and delightful interactions.

MIT Media Lab, Cambridge, Massachusetts, USA *May 2021*
Talk for the SpaceCHI 2021 workshop at the Conference on Human Factors in Computing Systems (CHI) of the Association for Computing Machinery (ACM)

Harvard University, Cambridge, Massachusetts, USA *October 2017*
Guest speaker for the Twelfth National American Synaesthesia Association Conference.

Institute of Philosophy, University of London, UK *May 2017*
Symposium contributor for the Open Senses Festival.

Carnegie Mellon University, Pittsburgh, USA *April 2017*
Synaesthesia as inspiration

Royal College of Art, London, UK *December 2016*
Synaesthesia as provocation

University College London (UCL), London, UK *September 2016*
Guest speaker for workstations, Science has No Borders

University College London (UCL), London, UK *August 2016*
Guest speaker for a film night – Film: Like Water for Chocolate

Royal College of Art & University of Oxford, UK *July 2016*
Symposium organiser and presenter for the joint symposium between the Royal College of Art and the University of Oxford - Crossing Over: The Art & Science of Multisensory Perception.

Future Leader Conference, Seoul, South Korea *October 2015*
Conference keynote speaker

Camden Arts Centre & Kingsgate Workshop Trusts, London, UK *June - July 2015*
Symposium keynote speaker for the The Lab Project: Multisensory Perception and Synaesthesia

REVIEWING & JUDGING

ACM CHI 2022—<u>Reviewer</u> for full paper *2022*

ACM TEI 2022—<u>Associate Chair</u> *2022*

IASDR 2021—<u>Associate Chair</u> *2021*

DRS (Design Research Society)—<u>Theme Chair & Reviewer</u> *2021*

Journal of Textile Design, Research and Practice—<u>Reviewer</u> *2020*

ACM DIS2020—<u>Jury Member</u> for ACM DIS2020 Student Design Competition *2020*

ACM DIS2019—<u>Reviewer</u> for Pictorial Papers for ACM DIS2019 *2019*

CURRENT PHD STUDENTS

Yoonji Lee, Industrial Design Department, College of Engineering, KAIST. *2024 –*

Research Keywords: Materiality, Play, Interaction, Design, HCI, Senses

Manoj Kumar, Industrial Design Department, College of Engineering, KAIST. *2022 – Leave of Absence*

Research Keywords: Robotics, Space Missions, Play, Human-Factors etc.

Brendan Commane, Helen Hamlyn Design Centre & School of Design, Royal College of Art. *2020 - On Leave*

Research Keywords: Dementia, Assistive Technology, Design, Human-Interaction, Tool, Human Factors etc.

Yuqian Sun, Computer Science Research Centre (CSRC) & School of Design, Royal College of Art. *2021 –*

Research Keywords: AI, Game, Interaction Design, Human-Computer Interaction, Design etc.

PUBLICATIONS (Conference & Journal)

1. Cho, H.N, Lee, Y.J, Lee, W.H, and <u>Lee, C.H</u> (2024), Thermo-Play: Exploring the Playful Qualities of Thermochromic Materials, **TEI 2024**, DOI: https://doi.org/10.1145/3623509.3633376

2. Choi, Y.J, Brook, K, Hiromi, O, and <u>Lee, C.H</u>. (2024) Transforming Food Waste into Natural Pigments: Raising Community School Awareness of Food Waste Recycling Opportunities through Co-design Methods, ***DRS (Design Research Society) 2024***, Boston, 24 June - 28 June

3. Sun, Y., Tang, Y., Pan, Z., Chen, Y., Qian, K., Xu, C., Wang, Z., Braud, T., <u>Lee, C.H</u>, Gao, Z., and Asadipour, A. (2023). AI Nüshu: An Exploration of Language Emergence in Sisterhood Through the Lens of Computational Linguistics. **SIGGRAPH Asia 2023 Art Paper**, DOI: https://doi.org/10.1145/3610591.3616427

4. Jeon, J.I, and <u>Lee, C.H</u> (2023), SoundMist: novel interface for spatial auditory experience. **UIST 2023 Poster**, DOI: TBC

5. Tang, Y, Sun, Y, Pan, Z., Chen, Y., Qian, K., Xu, C., Wang, Z., Braud, T., Lee, C.H., Gao, Z., and Asadipour, A. (2023). AI Nüshu (Women's scripts) - An Exploration of Language Emergence in Sisterhood. **SIGGRAPH Asia 2023 Art Gallery**, DOI: https://doi.org/10.1145/3610537.3622957

6. Lee, C.H, Balint, T, Chin, B.C, Kumar, M, Lee, Y.J, and Cho, H.N (2023), Space-Grounded: A Drugless Antidepressant Inhalation Device. **SpaceCHI 2023**, MIT, Massachusetts, USA

7. Sun, Y.Q, Lee, C.H, and Asadipour, A (2023) Hyborg Agency: Cultivating Conversational AI Creatures through Community Connections. **SIGGRAPH 2023 Art Gallery**. DOI: https://doi.org/10.1145/3588428.3593827

8. Sun, Y.C, Xu, Y, Cheng, C.H, Li, Y.H, Lee, C.H, and Asadipour, A, (2023). Explore the Future Earth with Wander 2.0: AI Chatbot Driven By Knowledge-base Story Generation and Text-to-image Model. In Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems **(CHI Interactivity '23)**. ACM, New York, NY, USA, Article 450, 1–5. https://doi.org/10.1145/3544549.3583931

9. Sun, Y.Q, Lee, C.H, Cheng, C.H, Asadipour, A, Xu, Y, and Li, Y.H, (2022) Wander [001]. **SIGGRAPH Asia Art Gallery** 2022 DOI: https://dl.acm.org/doi/abs/10.1145/3550470.3558441

10. Lee, C.H, Balint, T, Chin, B.R, Lee, Y.J, and Cho, H.N, (2022) Space-Grounded, *IAC 2022 (International Astronautical Congress 2022)*, Paris, France. https://iafastro.directory/iac/paper/id/69102/summary/

11. Sommer, B., Sayuti, A., Lin, Z., Bohra, S., Kayganaci, E., Hu, J., Zheng, C.Y., Lee, C.H., O'Donoghue, S., Hall, A., and Anderson, P. (2022) Spatialized video communication platforms: Applications in design education and conferencing, in Lockton, D., Lloyd, P., Lenzi, S. (eds.), *DRS (Design Research Society) 2022*, Bilbao, 25 June - 3 July, Bilbao, Spain, DOI: https://doi.org/10.21606/drs.2022.735

12. Lockton, D, Lallemand, C, Menheere, D, Lee, C.H, Lean, M, Offenhuber, D, Robbins, H, Giaccardi, E, and Huron, S. (2022) Editorial: Valuing the qualitative in design and data, in Lockton, D., Lloyd, P., Lenzi, S. (eds.), *DRS (Design Research Society) 2022*, Bilbao, 25 June - 3 July, Bilbao, Spain. https://doi.org/10.21606/drs.2022.1082

13. Lee, C.H and Balint, T (2021). Martian Delight: Exploring Qualitative Contact for Decoupled Communications, *Acta Astronautica*, ISSN 0094-5765, DOI: https://doi.org/10.1016/j.actaastro.2021.06.051

14. Ferrarello, L, Fiadeiro, R.P.C, Hall, A, Galdon, F, Anderson, P Grinyer, C, Stevens, J, and Lee, C.H (2021). Learning Remotely through Diversity and Social Awareness. The Grand Challenge approach to tackle societal issues through diversity and creative thinking, *DRS 2021*

15. Kim, R, Pschetz, L, Linehan, C, Lee, C.H, and Poslad, S. (2021). Archives in DNA: Workshop Exploring Implications of an Emerging Bio-Digital Technology through Design Fiction. **Mindtrek 2021 (Mindtrek '21)**, June 1–3, 2021, Tampere/Virtual, Finland. ACM, New York, NY, USA, 4 pages. https://doi.org/10.1145/3464327.3464966

16. Lee, C.H, Balint, T, Kim, R, and Sommer, B. (2021). Decoupled Communication System for Long-Duration Space Missions?. **SpaceCHI'21: Human-Computer Interaction for Space Exploration (CHI Workshop Position Paper)**, May 14, 21. ACM, New York, NY, USA.

17. Lee, C.H, and Balint, T, (2020). Martian Delight: Exploring Qualitative Contact for Decoupled Communications, **IAC 2020 (International Astronautical Congress)**, Dubai, UAE.

18. Gong, W.L, Xiao, L, Wang, X.H, and Lee, C.H. (2020). Dots — An Inclusive Natural User Interfaces (NUI) for Spatial Computing, **MobileHCI EA 20**, Oldenburg, Germany. DOI: https://doi.org/10.1145/3406324.3410715

19. Sommer, B, Lee, C.H, Nat, M, and Torrisi, V.S, (2020) Immersive Design Engineering, **Electronic Imaging,** (SD&A), XXXI, pp. 265-1-265-16(16).

20. Lee, C.H, Lockton, D, Stevens, J, Wang, S.J, and Ahn, S.H. (2019). Synaesthetic-Translation Tool: Synaesthesia as an Interactive Material for Ideation, **CHI LBW 19**, Glasgow. DOI: https://doi.org/10.1145/3290607.3312849

21. Balint, T and Lee, C.H, (2019). Pillow Talk—Curating Delight for Astronauts, **Acta Astronautica**, Volume 159, Pages 228-237. DOI: https://doi.org/10.1016/j.actaastro.2019.03.048

22. Wang, S.J, Zhang, L, Lee, C.H, and Moriarty. P. (2019) The Scope of Innovative Design In Enhancing Energy Efficiency, **International Conference on Applied Energy (ICAE)**, Västerås, Sweden.

23. Lee, C.H, Lockton, D and Kim, J.E, (2018). Exploring Cognitive Playfulness Through Zero Interactions, **DIS'18 Companion,** Hong Kong. DOI: https://doi.org/10.1145/3197391.3205413 **(Best Provocation Award—top 2%)**

24. Lee, C.H and Lockton, D, (2018). Silent Scene, **ACM Interactions'18 Demo**, 25, 6, 10-13. DOI: https://doi.org/10.1145/3279993

25. Balint, T and Lee, C.H, (2018). Pillow Talk—Curating Delight for Astronauts, **69th International Astronautical Congress (IAC)**, Bremen, Germany.

26. Lee, C.H, (2018). Synaesthesia Materialisation: Approaches to Applying Synaesthesia as a Provocation for Generating Creative Ideas within the Context of Design, **PhD Thesis**, Royal College of Art, School of Design, Innovation Design Engineering Research, UK.

27. Lockton, D., Ricketts, D, Chowdhury, S.A and Lee, C.H, (2017). Exploring Qualitative Displays and Interfaces, ***CHI'17 LBW***, Denver, CO, USA. DOI: http://dx.doi.org/10.1145/3027063.3053165

28. Ferrarello, L., Hall, A, Kann, M and Lee, C.H, (2017). Collaborating Design Risk, ***International Association of Societies of Design Research (IASDR)***, Ohio, USA.

29. Lee, C.H, (2017). Three Studies of Synaesthesia, ***ACM Interactions '17 Demo***, 24, 3, 8-11. DOI: https://doi.org/10.1145/3068337

PUBLIC KNOWLEDGE EXCHANGE

Hyundai Foundation Ondream Society, Seoul *2023*
Blueprint: Feasible Blue (curated the entire show)

DDP (Dongdaemun Design Plaza), Seoul *2022*
Inventive Minds and Ideas: Living In the Future (curated the entire show)

HACKAIST, Daejeon, Korea *2022*
Organized a hackathon between KAIST and Imperial College London (ICL)

Shinsegae, Daejeon Art & Science *2022*
Nexperium

SHOW RCA *2019*
Curated the whole show for the IDE programme

ACM CHI2019 *2019*
Poster Presentation

ACM DIS2018 *2018*
Poster Presentation

The Center SF, San Francisco, USA *2018*
Synaesthesia: Art, Love & Science

Rebecca Hossack Gallery, London, UK *2017*
Open Senses Festival

ACM CHI2017 *2017*
Poster Presentation

Lloyd's Register Foundation Headquarter, London, UK *2017*
Design For Safety at Sea

University College London (UCL), London, UK *2016*
Doing It Together Science (DITOs)

Royal College of Art (RCA), London, UK *2016*
Crossing Over: The Art & Science of Multisensory Perception

Royal College of Art (RCA), London, UK *2016*
Amnesty of Rejection Redux

Royal College of Art (RCA), London, UK *2016*
Work in Progress Show

Henry Moore Gallery, Royal College of Art (RCA), London, UK *2015*
Work in Progress Show

Former BBC Headquarter, London, UK *2013*
Touch Art Fair

Hoxton Gallery, London, UK *2013*
London Design Festival

Mood Museum of Design, Milan, Italy *2013*
A'Design Award

Mumbai, India *2013*
Product Design Days

Gdansk, Poland *2013*
About Design Expo

Central Academy of Fine Arts, Beijing, China *2009*
Graduation Exhibition

PORTFOLIOS & PRESS & NEWS

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SKILLS

Embedded Systems:
Atmel AVR, PCB Design, EAGLE, Arduino IDE, Raspberry PI etc.

Software:
Python, C++, HTML, Rhino 3D, Xcode, Swift, 3ds Max, Blynk, V-Ray, Photoshop, Filmora, etc.

Fabrication:
3D Printing, CNC, Laser Cutting, Carpentry, etc.

LANGUAGES

English
Fluent

Chinese
Fluent

Korean
Fluent

OTHER EXPERIENCE & ACTIVITIES

Swimming indoor marathon for people with diabetes
22miles (equivalent of swimming length from the UK to France), UK
February - May 2018

Librarian

Big Tree Library, Seoul, South Korea
November 2011 - June 2012

Civilian Document Analyst Assistant
Mandatory Military Service, Seoul, South Korea
October 2009 – October 2011

REFERENCES

Dr. Dan Lockton—Director of Imaginaries Labs & Assistant Professor at Eindhoven University of Technology & Courtesy Appointment at Carnegie Mellon University (CMU).
Contact Address: d.j.g.lockton@tue.nl

Dr. Bjorn Sommer—Head of 1st Year Programme & Tutor (Assistant Professor) in Innovation Design Engineering at the Royal College of Art & Imperial College London.
Contact Address: ashley.hall@rca.ac.uk

Dr. Tibor Balint—Principal Researcher / Designer / Engineer at JPL NASA.
Contact Address: tibor.balint@jpl.nasa.gov