CHUNG-YEON LEE

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RESEARCH INTERESTS

Generative AI: LLM, VLM, VLA, Stable diffusion, World models

Robotics/Vision: Mobile manipulation, Visual SLAM, Multimodal perception, Neural rendering

Cognitive Neuroscience: Memory encoding and retrieval, Visuo-spatial perception

Other Topics: Augmented/virtual reality, Life-logging data analysis, Anomaly detection

EDUCATION

2013 – 2023 Ph.D. in Computer Science and Engineering, Seoul National University, Korea
- Thesis: *Spatial Perception of Complex Scenes using Neural Representation Learning*
- Marks: 3.80 GPA (on a 4.3 GPA scale)

2011 – 2013 M.S. in Interdisciplinary Program in Neuroscience, Seoul National University, Korea
- Thesis: *EEG Correlates of Multimodal Episodic Memory Formation*
- Marks: 3.49 GPA (on a 4.3 GPA scale)

2003 – 2010 B.S. in Multimedia Engineering, Sungkyul University, Korea
- Thesis: *Automatic Tagging Scheme based on Face Recognition*
- Marks: 4.38 GPA (on a 4.5 GPA scale), *Valedictorian*

RESEARCH EXPERIENCE

2011 – 2022 Research Assistant, Biointelligence Laboratory, Seoul National University, Seoul, Korea
- Advisor: Professor Byoung-Tak Zhang
- Focused Topics: Machine learning, AI robots, Cognitive neuroscience

2018 Visiting Researcher, Institute for Artificial Intelligence, Universität Bremen, Germany
- Advisor: Professor Michael Beetz
- Focused Topics: Visual imitation learning for service robots

2011 Visiting Researcher, Artificial Intelligence Group, Universität Bielefeld, Germany
- Advisor: Professor Ipke Wachsmuth
- Focused Topics: Learning to read user intentions from multimodal data of VR environment

2011 Visiting Researcher, Intelligent Autonomous Systems Group, TUM, Germany
- Advisor: Professor Michael Beetz
- Focused Topics: Learning and generation of 3D human motions using cRBM

2008 – 2011 Research Assistant, XICOM Laboratory, Sungkyul University, Anyang, Korea
- Advisor: Professor Seongah Chin
- Focused Topics: Facial expression synthesis/recognition, Brain-computer interface

AWARDS AND HONORS

2021 The Minister Prize for the Winner of AI Championship, Ministry of SMEs and Startups, Korea
2021 The Minister Prize for the Winner of AI Competition, Ministry of Science and ICT, Korea
2018 100 Excellent Research Projects of 2018, Ministry of Science and ICT, Korea
2010 Chief Director Award, Sungkyul University
2009 Effort Award, International Student Design Festival, Asia-Pacific Engineering Education Congress

[Competition Ranked]

09/21 [1st Place] World Robot Challenge 2020, Service Robotics (PRC), Virtual
06/21 [1st Place] RoboCup 2021, RoboCup@Home Domestic Standard Platform League, Virtual
10/21 [1st Place] AI Championship 2021, Anomaly Detection Task, Ministry of SMEs and Startups, Korea
06/21 [2nd Place] AI Competition 2021, Numerical Analysis Task, Ministry of Science and ICT, Korea
07/19 [2nd Place] RoboCup 2019, RoboCup@Home Domestic Standard Platform League, Sydney, Australia
10/18 [4th Place] World Robot Summit 2018, Partner Robot Challenge–Real Space, Tokyo, Japan
06/18 [4th Place] RoboCup 2018, RoboCup@Home Social Standard Platform League, Montreal, Canada
07/17 [1st Place] RoboCup 2017, RoboCup@Home Social Standard Platform League, Nagoya, Japan

[Scholarships]

2014 *Yoon Songyee & Kim Taek-Jin Scholarship*, Seoul National University
2009 *Outstanding Student Scholarship*, Industry-Academy Cooperation Group, Sungkyul University
2008 *IT Masters Scholarship*, KT Corporation
2008 – 2009 *Digital Venture Pilot Project Fund*, Sungkyul University
2003 – 2009 *Academic Merit Scholarships* (6 semesters), Sungkyul University

[Conference Awards]

2018 *Best Technical Demo Award*, AAAI Conference on Artificial Intelligence (AAAI-18)
2018 *Excellent Student Paper Award*, Korea Software Congress (KSC-2018)
2016 *Best Paper Award*, 2016 Int'l Symposium on Perception, Action, and Cognitive Systems (PACS-2016)
2015 – 2016 *Best Paper Award* (2 times), Conferences of KIISE and Korea Computer Congress
2010 – 2016 *Excellent Presentation Award* (8 times), Conferences of KIISE, IEEK, and KCC

ACADEMIC SERVICES

[Program Committee & Reviewer]

2025 *IEEE Robotics and Automation Letters (RA-L)*
2025 *Korea Computer Congress (KCC)*
2024 *IEEE Transactions on Systems, Man, and Cybernetics: Systems (SMCA)*
2022 *IEEE International Conference on Robotics and Automation (ICRA)*
2022 *AAAI Conference on Artificial Intelligence (AAAI)*
2021 *Frontiers in Robotics and AI*

[Invited Talks]

09/24 "AI Technology for General-Purpose Robot Intelligence", Robot+AI Seminar, Advantech
05/24 "Utilization of Generative AI on Media Software", Division of Media Software, Sungkyul University
05/23 "Development and Utilization of LLMs", Division of Media Software, Sungkyul University
07/21 "Intelligent Agents in Real Life", ETRI

06/21 “Intelligent Agents in Real Life”, Korea Internet Conference (KRnet-2021)
12/19 “Empowering cognitive AI robots with deep learning”, HTW-Berlin
06/19 “How to develop a service robot”, Dept. of Biomedical Engineering, Gachon University
04/18 “AI & social robotics”, Division of Media Software, Sungkyul University
01/18 “Cognitive agents that learn everyday life”, Institute for Artificial Intelligence, Uni. Bremen
10/14 “AI and machine learning”, Dept. of Multimedia Engineering, Sungkyul University
10/14 “Theory and applications of cognitive signal processing”, The 1st Tutorials on Cognitive Technology, National Association of Cognitive Science Industries (NACSI)
08/14 “Deep learning”, Dept. of Multimedia Engineering, Sungkyul University
10/11 “Research trends in multimedia engineering”, Dept. of Multimedia Engineering, Sungkyul University

[Teaching & Mentoring]

2025 Mentor / ICT Hanium DreamUp Program,
Institute for Information & Communications Technology Promotion (IITP)

2022 Lecturer / AI Model Development (Visual Perception Part)
Euclid Soft

2021 Lecturer / Data Analysis & AI Program [link],
YBM Career Campus

2017 Lecturer / Introduction and Practices on Machine Learning,
Doosan Corporation

2017 Lecturer / Tutorials on Machine Learning and Deep Learning,
School of Computer Science and Engineering, Sungshin University

2016 Lecturer / Deep Learning Tutorial (using Caffe) for the 15th Tutorials on Cognitive Technology [link],
National Association of Cognitive Science Industries (NACSI)

2014 Mentor / Academic Counselling Program (Engineering College Part),
College of Liberal Studies, Seoul National University

2014 Mentor / Discrete Mathematics,
Department of Computer Science and Engineering, Seoul National University

2012 TA / Computational Modeling of Intelligence,
Interdisciplinary Program in Cognitive Science, Seoul National University

2011 TA / Brain, Computation, and Neural Learning
Brain-Cognition-Behavior (BCB) Course, Seoul National University

2011 TA / Computational Modeling of Intelligence,
Interdisciplinary Program in Cognitive Science, Seoul National University

R&D PROJECT PARTICIPATIONS (~2021*)

** Since 2021, involved in various industrial R&D projects at Surromind Inc.*

08/21–11/21 Sound/Vibration-Based AI Fault Diagnosis System
National IT Industry Promotion Agency (NIPA), Korea
**Served as the principal investigator*
**Selected as the Excellent ICT Research Project of 2021, Korea Communications Agency*

04/18–03/22 Development of Human-care Robot Technology for Aging Society
Institute for Information & Communications Technology Promotion (IITP), Korea
**Partly developed a mapping and navigation module and a robot interface for AI services*

03/15–07/21 Cognitive Agents That Learn Everyday Life (SW Star Lab Project)
Institute for Information & Communications Technology Promotion (IITP), Korea
Served as the project manager and the open-source manager
Selected as Top-100 Excellent Research Projects of 2018, Ministry of Science and ICT

09/16–03/21 Autonomous Learning in Mobile Cognitive Machines
Air Force Office of Scientific Research (AFOSR), USA

04/17–03/19 Service Technology Development for Noninvasive Diagnosis and Management of Sleep and Sleep Environment
Ministry of Trade, Industry and Energy, Korea

02/18–01/19 Self-Programming Cognitive Robots based on Learning from Human Behavior Data
National Research Foundation (NRF), Korea

02/18–09/18 Humanoid Robot PoC (SLAM & Navigation Part)
EMART Inc., Korea

12/14–11/15 One-Shot/Incremental Learning-based Object Recognition Algorithm,
NAVER Corp., Korea

06/12–09/15 Context and Scene Understanding using Multimodal Sensor Information
Samsung Electronics, Korea, *Served as the project manager*

04/15–07/15 Wrong Pose Detection Algorithm for Violin Performance Pose Correction
Samsung Electronics, Korea

04/12–03/15 Videome: Cognitive Machine Learning from Digital Videos
National Research Foundation (NRF), Korea

10/14–12/14 EEG Feature Processing for Early Detection of Stroke
Samsung Electronics, Korea, *Served as the project manager*

05/11–04/13 Brain Net: Uncovering the Hyperedges of Cortical Brain Graphs
National Research Foundation (NRF), Korea, *Served as the project manager*

05/11–05/13 Machine Learning for Generating Flexible Motions of Robot Arms
National Research Foundation (NRF), Korea

05/10–04/11 Super-Realistic Face Modeling using Parameterization of Wound and Scar
National Research Foundation (NRF), Korea

01/11–03/11 Genome-wide Analysis based on Multiple SNP Loci
Centers for Disease Control & Prevention (CDC), Korea

04/09–05/10 Live Expression Cloning System with Emotion Extraction from Bio Information for Sensible Entertainment Contents National Research Foundation (NRF), Korea

07/08–08/09 Deriving Exaggerated Facial Expressions from Motion Data based on Facial features and Personal Styles, National Research Foundation (NRF), Korea

12/08–04/09 Customized 3D Face and Expression for PDA devices, Technology Translation Program Small & Medium Business Administration (SMBA), Korea

INTELLECTUAL PROPERTIES

2025 Learning and evaluation methods for language model specialized in retrieval-augmented generation and system thereof, KIPO (Pending/10-2025-0035173)

2022 Anomaly detection method based on multi-modal sensor, and computing apparatus for performing the same, KIPO (10-2413958; PCT/KR2021/004701)

2021 Method for diagnosing machine failure using sound and vibration based on deep learning and diagnostic device using them, KIPO (Pending/10-2021-0167790; PCT/KR2022/016624)

2019 Method and apparatus of visual feature augmentation for visual SLAM using object labels, KIPO (10-2285427; PCT/KR2019/016641)

2015 Contents recommending system and contents recommending method based on EEG/ECG using wireless communication, KIPO (10-1576892)

2015 Android Sensor Data Logging Application, Korea Copyright Commission (C-2016-001315)

2015 Automatic Background Lifelog Recording Application for Google Glass, Korea Copyright Commission (C-2016-001434)

2012 Neural network-based motion generating program, Korea Copyright Commission (C-2012-002484)

2012 Place recognizing device and method for providing context awareness service, KIPO (10-1995799)

JOURNAL PUBLICATIONS

[International]

- Taewoong Kang, Dongwoon Song, Jae-Bong Yi, Joonyoung Kim, **Chung-Yeon Lee**, Youngjae Yoo, Minji Kim, Hyun-Jun Jo, Byoung-Tak Zhang, Jaebok Song & Seung-Joon Yi, "Team Tidyboy at the WRS 2020: a modular software framework for home service robots," *Advanced Robotics*, (SCIE, IF: 1.699), 2022.
- Sang-Woo Lee, **Chung-Yeon Lee**, Dong-Hyun Kwak, Jung-Woo Ha, Jeonghee Kim, Byoung-Tak Zhang, "Dual-memory neural networks for modeling cognitive activities of humans via wearable sensors," *Neural Networks*, (SCI, IF: 3.216), Vol. 92, pp. 17–28, 2017.
- Seongah Chin, **Chung-Yeon Lee**, Jaedong Lee, "An automatic method for motion capture-based exaggeration of facial expressions with personality types," *Virtual Reality*, (SCIE, IF: 0.341), Vol. 17, No. 3, pp. 219–237, 2013.
- Seongah Chin and **Chung-Yeon Lee**, "Personality trait and facial expression filter-based brain-computer interface," *International Journal of Advanced Robotic Systems* (SCIE, IF: 0.375), Vol. 10, 138:2013.
- **Chung-Yeon Lee**, Sangyong Lee, and Seongah Chin, "Multi-layer structural wound synthesis on 3D face," *Computer Animation and Virtual Worlds (JCAVW)* (SCI, IF: 0.530), Vol. 22, No. 2, pp. 177–185, April 2011.
- Seongah Chin and **Chung-Yeon Lee**, "Exaggeration of facial expressions from facial motion capture data," *Chinese Optics Letters* (SCIE, IF: 0.967), Vol. 8, No. 1, pp. 29–32, January 2010.
- **Chung-Yeon Lee** and Seongah Chin, "Facial expression mirroring-based classification of emotions using electroencephalogram signals," *International Journal of Multimedia and Ubiquitous Engineering*, Vol. 8, No. 2, pp.101–110, 2013.

[Domestic]

- **Chung-Yeon Lee**, Dong Hyun Kwak, Beom-Jin Lee, and Byoung-Tak Zhang, "Event cognition-based daily activity prediction using wearable sensors," *Journal of KIISE*, 43(7), pp. 781–785, July 2016.

- **Chung-Yeon Lee**, Beom-Jin Lee, Kyoung-Woon On, Jung-Woo Ha, Hong-Il Kim and Byoung-Tak Zhang, "Place recognition using ensemble learning of mobile multimodal sensory information," *Journal of KIISE: Computing Practices,* 21(1), pp. 64–69, January 2015.
- **Chung-Yeon Lee** and Byoung-Tak Zhang, "Analysis on effective EEG connectivity of memory retrieval in the brain," *Journal of KIISE: Computing Practices and Letters,* 20(4), pp. 257–261, April 2014.
- **Chung-Yeon Lee** and Byoung-Tak Zhang, "Brain-behavior analysis of multimodal episodic memory formation," *Journal of KIISE: Computing Practices and Letters,* 19(12), pp. 703–707, December 2013.
- **Chung-Yeon Lee**, Beom-Jin Lee, Jung-Woo Ha, and Byoung-Tak Zhang, "Place recognition by learning mobile vision and location data," *Journal of KIISE: Computing Practices and Letters,* 19(5), pp. 288–292, May 2013.
- **Chung-Yeon Lee**, Jaedong Lee, and Seongah Chin, "Automatic tagging scheme for plural faces," *Journal of The Institute of Electronics Engineers of Korea,* 37-CI(5), pp. 11–21, May 2010.

CONFERENCE PROCEEDINGS

[International]

- **Chung-Yeon Lee,** Youngjae Yoo, and Byoung-Tak Zhang, " PlaceNet: Neural Spatial Representation Learning with Multimodal Attention," *Proceedings of the 31th International Joint Conference on Artificial Intelligence* (IJCAI-2022, July 2022), pp. 1031-1038, 2022.
- DongWoon Song, Taewoong Kang, Jaebong Yi, Joonyoung Kim, Taeyang Kim, **Chung-Yeon Lee**, Je-Hwan Ryu, Minji Kim, HyunJun Jo, Byoung-Tak Zhang, Jae-bok Song, and Seung-Joon Yi, "RoboCup@Home 2021 Domestic Standard Platform League Winner," In *RoboCup 2021: Robot World Cup XXIV* (LNCS/LNAI, vol. 13132), Springer, Cham, pp. 291-301, 2022.
- Youngjae Yoo, **Chung-Yeon Lee** (co-1st author), and Byoung-Tak Zhang, "Multimodal Anomaly Detection based on Deep Auto-Encoder for Object Slip Perception of Mobile Manipulation Robots," *Proceedings of International Conference on Robotics and Automation* (ICRA-2021, June 2021)
- **Chung-Yeon Lee**, Hyundo Lee, Injune Hwang, and Byoung-Tak Zhang, "Visual perception framework for an intelligent mobile robot," *Proceedings of 17th International Conference on Ubiquitous Robots and Ambient Intelligence* (UR-2020, Kyoto, Japan, June 2020)
- Beom-Jin Lee, Jin-Young Choi, **Chung-Yeon Lee**, Kyoung-Wha Park, Sung-Jun Choi, Cheolho Han, Dongsig Han, Christina Baek, Patrick Emaase, and Byoung-Tak Zhang, "Perception-Action-Learning System for Mobile Social-Service Robots using Deep Learning," *Proceedings of the 32nd AAAI Conference on Artificial Intelligence* (AAAI-18, New Orleans, February 2018, Best Technical Demo Awarded)
- Sang-Woo Lee, **Chung-Yeon Lee**, Dong Hyun Kwak, Jiwon Kim, Jeonghee Kim, and Byoung-Tak Zhang, "Dual-memory deep learning architectures for lifelong learning of everyday human behaviors," *Proceedings of the 25th International Joint Conference on Artificial Intelligence*, pp. 1669–1675, (IJCAI-16, New York, July 2016)
- **Chung-Yeon Lee** and Byoung-Tak Zhang, "Effective EEG Connectivity Analysis of Episodic Memory Retrieval," *In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.): Proceedings of the 36th Annual Conference of the Cognitive Science Society, Austin, TX: Cognitive Science Society*, pp. 833–838. (CogSci 2014, Quebec City, July 23~26, 2014)

- **Chung-Yeon Lee**, Beom-Jin Lee, Joon Shik Kim, and Byoung-Tak Zhang, "Neural correlates of episodic memory formation in audio-visual pairing tasks," *In N. Miyake, D. Peebles, & R. P. Cooper (Eds.): Proceedings of the 34th Annual Conference of the Cognitive Science Society, Austin, TX: Cognitive Science Society*, pp. 1864–1869. (CogSci 2012, Sapporo, August 1~4, 2012)
- **Chung-Yeon Lee**, Sangyong Lee, and Seongah Chin, "Multi-layer structural wound synthesis on 3D face," *Proc. The 24th International Conference on Computer Animation and Social Agents (CASA 2011),* Chengdu, China, May 26~28, 2011.
- **Chung-Yeon Lee** and Seongah Chin, "Interactive wound synthesis on 3D face using inverse projection mapping," *Proc. The International Congress on Computer Applications and Computational Science (CACS 2010),* Singapore, December 4~6, 2010.
- Seongah Chin, **Chung-Yeon Lee**, Jaedong Lee, "Facial expression image mapping for brain computer interface using EI type classification," *Proc. The International Conference on Information Sciences and Interaction Sciences (ICIS 2010),* Chengdu, China, June 23~25, 2010.
- Seongah Chin, **Chung-Yeon Lee**, Jaedong Lee, "Personal style and Non-negative matrix factorization based exaggerative expressions of face," *Hamid R. Arabnia, Leonidas Deligiannidis (Eds.): Proceedings of the 2009 International Conference on Computer Graphics & Virtual Reality*, CSREA Press, pp. 91–96. (CGVR 2009, Las Vegas, July 13~16, 2009)
- Seongah Chin and **Chung-Yeon Lee**, "Leadership and self-propelled behavior based autonomous virtual fish motion," *Proc. International Conference on Convergence and hybrid Information Technology (ICCIT 2008)*, pp. 336–339, Pusan, Korea, November 11~13, 2008.

[Domestic]

- Daebum Yuk, Seul Kim, Byoung-Hee Kim, and **Chung-Yeon Lee**, "LLM Training and Dataset Generation for Robust Retrieval-Augmented Generation, " *Korea Computer Congress 2025 (KCC 2025)*
- Soyoon Chung, Daebum Yuk, Byoung-Hee Kim, and **Chung-Yeon Lee**, "An Integrated System for Fine-Tuning and Evaluation of Korean LLMs, " *Korea Computer Congress 2025 (KCC 2025)*
- Youngjae Yoo, **Chung-Yeon Lee**, and Byoung-Tak Zhang, "Autoencoder-based Multimodal Anomaly Detection for Mobile Manipulation Robots," *Korea Computer Congress 2020 (KCC 2020)*, pp. 482-484, Busan, Korea, July 2020.
- Injune Hwang, **Chung-Yeon Lee**, Hyundo Lee, Byoung-Tak Zhang, "Human recognition and tracking for musing visual feature-based person re-identification model," *Korea Software Congress 2018 (KSC 2018),* pp. 1958-1960, Pyeongchang, Korea, December 19~21, 2018. (Excellent Student Paper Awarded)
- Hyundo Lee, **Chung-Yeon Lee**, Injune Hwang, Byoung-Tak Zhang, "Object-aware feature augmentation for robust visual SLAM of mobile robots," *Korea Software Congress 2018 (KSC 2018),* pp. 1883-1885, Pyeongchang, Korea, December 19~21, 2018. (Excellent Student Paper Awarded)
- Sang-Woo Lee, **Chung-Yeon Lee**, Dong Hyun Kwak, Jung-Woo Ha, Jung-Hee Kim, Byoung-Tak Zhang, "Dual Memory Architecture for Daily Life Pattern Learning based on Wearable Sensor," *Annual Conference of Korean Society of Cognitive Science,* May 2017.
- **Chung-Yeon Lee**, Dong-Sig Han, Byoung-Tak Zhang, "Event segmentation by generating descriptions of life-logging image stream," *Proc. Korea Computer Congress 2016 (KCC 2016)*, pp. 856–858, Jeju, Korea, June 29~July 1, 2016. (Excellent Presentation Awarded)

- Dong-Sig Han, **Chung-Yeon Lee**, Byoung-Tak Zhang, "Temporal dynamic memory networks and data augmentation for question answering optimization," *Proc. Korea Computer Congress 2016 (KCC 2016)*, pp. 818–820, Jeju, Korea, June 29~July 1, 2016. (Excellent Paper Awarded)
- **Chung-Yeon Lee**, Dong-Hyun Kwak, Beom-Jin Lee, Byoung-Tak Zhang, "Event Cognition-based Daily Activity Prediction from Wearable Sensors," *Proc. The 42th Winter Conference of Korean Institute of Information Scientists and Engineers*, pp. 616–618, December 12~17, 2015. (Best Paper Awarded)
- Jae-Kyu Oh, **Chung-Yeon Lee**, Byoung-Tak Zhang, "Analyzing multi-sensory data of smartwatch for tipsiness status," *Proc. The 42th Winter Conference of Korean Institute of Information Scientists and Engineers*, pp. 610–612, December 12~17, 2015. (Excellent Paper Awarded)
- Hanock Kwak, **Chung-Yeon Lee**, Beom-Jin Lee, Byoung-Tak Zhang, "One-shot online learning for joint bayesian model-based face recognition," *Proc. The 42th Winter Conference of Korean Institute of Information Scientists and Engineers*, pp. 657–659, December 12~17, 2015.
- **Chung-Yeon Lee**, Dong Hyun Kwak, Hanock Kwak and Byoung-Tak Zhang, "Activity recognition by learning auditory-visual lifelogs from wearable sensors," *Proc. Korea Computer Congress 2015 (KCC 2015)*, pp. 921–923, Jeju, Korea, June 24~26, 2015. (Excellent Presentation Awarded)
- Dong Hyun Kwak, **Chung-Yeon Lee**, Hanock Kwak and Byoung-Tak Zhang, "Wearable lifelog learning using sparse hidden state deep recurrent neural network," *Proc. Korea Computer Congress 2015 (KCC 2015)*, pp. 751–753, Jeju, Korea, June 24~26, 2015. (Best Paper Awarded)
- **Chung-Yeon Lee**, Sang-Woo Lee, Dong-Hyun Kwak and Byoung-Tak Zhang, "Wearable lifelog-based context awareness and its application scenario," *Proc. The 41th Winter Conference of Korean Institute of Information Scientists and Engineers*, pp. 337–339, Pyeongchang, Korea, December 18~20, 2014. (Excellent Presentation Awarded)
- Beom-Jin Lee, **Chung-Yeon Lee** and Byoung-Tak Zhang, "RGB-D-T face recognition using convolutional-recursive deep learning," *Proc. The 41th Winter Conference of Korean Institute of Information Scientists and Engineers*, pp. 616–618, Pyeongchang, Korea, December 18~20, 2014. (Excellent Presentation Awarded)
- **Chung-Yeon Lee**, Byoung-Tak Zhang, "Place recognition using ensemble learning of audio-vision-location integrated information," *Proc. Korea Computer Congress 2014 (KCC 2014)*, pp. 353–355, Pusan, Korea, June 25~27, 2014. (Excellent Presentation Awarded)
- **Chung-Yeon Lee**, Byoung-Tak Zhang, "Effective EEG connectivity analysis of memory processing in the brain," *Proc. The 40th Fall Conference of Korean Institute of Information Scientists and Engineers*, Vol. 40, pp. 695–697 Jeju, Korea, November 15~16, 2013. (Excellent Presentation Awarded)
- **Chung-Yeon Lee**, Byoung-Tak Zhang, "Brain-behavior analysis of multimodal episodic memory formation," *Proc. Korea Computer Congress 2013 (KCC 2013)*, pp. 1417–1419, Yeosu, Korea, June 26~28, 2013. (Excellent Presentation Awarded)
- **Chung-Yeon Lee**, Beom-Jin Lee, Jung-Woo Ha, Byoung-Tak Zhang, "Place recognition by learning mobile vision-location data," *Proc. The 39th Fall Conference of Korean Institute of Information Scientists and Engineers*, Vol. 39, No. 2(B), pp. 247–249, Daejeon, Korea, November 23~24, 2012. (Excellent Presentation Awarded)

- Joon Shik Kim, Jong-min Lee, **Chung-Yeon Lee**, Byoung-Tak Zhang, "Prediction of cognitive tasks via Hypernetwork sampling of EEG data,"*Proc. The 39th Fall Conference of Korean Institute of Information Scientists and Engineers*, Vol. 39, No. 2(B), pp. 168–170, Daejeon, Korea, November 23~24, 2012.
- Joon Shik Kim, **Chung-Yeon Lee**, Byoung-Tak Zhang, "Particle filter inspired probability prediction model for the sequence of EEG tasks,"*Proc. Fall Conference of Korean Institute of Intelligent Systems (KIIS)*, Vol. 22, No. 2, pp. 258–260, Seoul, Korea, November 9~10, 2012.
- **Chung-Yeon Lee** Beom-Jin Lee, Byoung-Tak Zhang, "Electrooculogram-based scene transition detection for interactive video retrieval," *Proc. Korea Computer Congress 2012 (KCC 2012)*, Vol. 39, No. 1(B), pp. 408–410, Jeju, Korea, June 27~29, 2012.
- Joon Shik Kim, **Chung-Yeon Lee**, Byoung-Tak Zhang, "Principal component analysis of higher-order hyperedges in EEG data," *Proc. Korea Computer Congress 2012 (KCC 2012)*, Vol. 39, No. 1(B), pp. 414–416, Jeju, Korea, June 27~29, 2012.
- Joon Shik Kim, **Chung-Yeon Lee**, Minsu Zhang, Kyoung-Tae Kim, Mun-Gon Nam, and Jun-Hee Nam, "Zipf's law and the N-gram analysis of TV drama scripts," *Proc. Spring Conference of Korean Institute of Intelligent Systems (KIIS)*, Vol. 22(1), pp. 217, Mokpo, Korea, April 19~20, 2012.
- **Chung-Yeon Lee**, Ji-seob Kim, Eun-Sol Kim, Karinne Ramirez Amaro, Michael Beetz, Byoung-Tak Zhang, "Learning and generation of human motion using Boltzmann machines," *Proc. The 38th Fall Conference of Korean Institute of Information Scientists and Engineers*, Vol. 38, No. 2(B), pp. 357–360, Seoul, Korea, October 25~26, 2011.
- Joon Shik Kim, **Chung-Yeon Lee**, Eun-Sol Kim and Byoung-Tak Zhang, "Characterization of actors in TV drama via complex network measures," *The 38th Fall Conference of Korean Institute of Information Scientists and Engineers*, Vol. 38, No. 2(B), pp. 295–298, Seoul, Korea, October 25~26, 2011.
- **Chung-Yeon Lee** Eun-Sol Kim, Sangwoo Lee, Bongkyung Ko, Joon Shik Kim, Byoung-Tak Zhang, "Properties of human cognitive learning in a movie scene-dialogue memory game using EEG-based brain function analysis," *Proc. Korea Computer Congress 2011 (KCC 2011), Vol. 38, No. 1(B), pp. 210-213,* Vol. 38, No. 1(c), pp.210–213, Gyeongju, Korea, June 29~July 1, 2011.
- Eun-Sol Kim, **Chung-Yeon Lee**, Ki-Seok Kevin Lee, Hyunmin Lee, Joon Shik Kim, Byoung-Tak Zhang, "Searching for spatio-temporal pattern in EEG signal with Hypernetwork," *Proc. Korea Computer Congress 2011 (KCC 2011), Vol. 38, No. 1(C)*, pp. 331-334, Vol. 38, No. 1(c), pp.331–334, Gyeongju, Korea, June 29~July 1, 2011.
- Joon Shik Kim, Eun-Sol Kim, Byoung-Kwon Lim, **Chung-Yeon Lee**, Byoung-Tak Zhang, "Indian buffet process inspired component analysis for fMRI data," *Proc. Korea Computer Congress 2011 (KCC 2011),* Vol. 38, No. 1(c), pp.191–194, Gyeongju, Korea, June 29~July 1, 2011.
- **Chung-Yeon Lee** and Seongah Chin, "Facial soft-tissue depth map using Thin-plate spline," *Proc. The 32th Fall Conference of The Institute of Electronics Engineers of Korea (IEEK)*, pp. 449–450, Seoul, Korea, November 2010.
- Sangyong Lee, **Chung-Yeon Lee**, and Seongah Chin, "Vivid face in game using BCI," *Proc. The 32th Fall Conference of The Institute of Electronics Engineers of Korea (IEEK)*, pp. 490–491, Seoul, Korea, November 2010. (Excellent Presentation Awarded)

- **Chung-Yeon Lee** and Seongah Chin, "A selection of EEG electrodes supporting emotion recognition for design of compact BCI," *Proc. The 33th Summer Conference of The Institute of Electronics Engineers of Korea (IEEK)*, pp. 1553–1554, Jeju, Korea, June 2010.
- **Chung-Yeon Lee**, Jaedong Lee, and Seongah Chin, "Face recognition-based automatic tagging scheme for social network service," *Proc. The 31th Fall Conference of The Institute of Electronics Engineers of Korea (IEEK)*, pp. 369–370, Seoul, Korea, November 2009.

WORKSHOP PAPERS, POSTERS, AND ABSTRACTS

- **Chung-Yeon Lee**, Hyundo Lee, Injune Hwang, Byoung-Tak Zhang, "Spatial Perception by Object-Aware Visual Scene Representation," *ICCV 2019 Workshop on Deep Learning for Visual SLAM,* Seoul, Korea, November 2, 2019.
- **Chung-Yeon Lee**, Hyundo Lee, Injune Hwang, Byoung-Tak Zhang, "Visual perception framework for human-care service robots," *HRI 2019 Workshop on Social Human-Robot Interaction of Human-care Service Robots,* EXCO, Daegu, Korea, March 11~14, 2019.
- **Chung-Yeon Lee**, Jung-Woo Ha, Beom-Jin Lee, Woo-Sung Kang and Byoung-Tak Zhang, "Place awareness learned by mobile vision-GPS sensor data," *NIPS 2012 Workshop on Machine Learning Approaches to Mobile Context Awareness,* Lake Tahoe, NV, USA, December 3~8, 2012.
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