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RESEARCH INTERESTS

Human Computer Interaction (HCI), Nature Inspired User Interface, Pseudo Interface, Interaction & Interface in Mobile, Collective Intelligence, Augmented Reality, Pervasive Computing, Human Computation, Media Facade, Information Visualization, Interactive Evolution

EDUCATION

- **Korea Advanced Institute of Science and Technology** Daejeon, Korea
Ph.D in Graduate School of Culture Technology Feb. 2010 – Present
GPA: 4.0/4.30, KAIST sponsored scholarship
- **Korea Advanced Institute of Science and Technology** Daejeon, Korea
M.S. in Computer Science (Culture Technology Program) Sep. 2007 – Feb. 2010
GPA: 3.73/4.30, State sponsored scholarship
- **Kwangwoon University** Seoul, Korea
B.S. in Computer Science Mar. 2001 – Mar. 2007
GPA: 4.44/4.50, ranked 1 / 68

PUBLICATIONS

- **S. Hwang**, Y. Park, K. Lee , “EmPress: Intuitive Emotional Communication over Pressure Sensitive Keyboards”, HCI Society of Korea (HCIKOREA), 2011
- **S. Hwang**, J. H. Ryu, “ClickableTouch: Physical Click Feedback on Touchscreen Interface”, HCI Society of Korea (HCIKOREA), 2011
- **S. Hwang**, J. H. Ryu, “Vibro-tactile based Navigation for the Driving Environment”, IEEE International Conference on Pervasive Computing and Communications (PerCom) Workshop on SmartE, Germany, 2010
- **S. Hwang**, S. Kim, Y. Park, C. Lim, “Development of Multi-touch based Korean inputting system and Evaluation”, HCI Society of Korea (HCIKOREA), 2010
- **S. Hwang**, K. Lee, W. Yeo, “My Green Pet: A Current-based Interactive Plant for Children”, International Conference on Interaction Design and Children (IDC), Spain, 2010
- **S. Hwang**, J. H. Ryu, “EXMAR: EXpanded view of Mobile Augmented Reality”, The IEEE International Symposium on Mixed and Augmented Reality (ISMAR Poster), 2010
- Y. Park, **S. Hwang**, “A Study on the User Interaction Method for Web Browsing in Mobile Phone”, Korea Society of Design Science (DESIGNKOREA), 2009
- **S. Hwang**, K. Lee, C. Lim, “Virtual Thumb : One Handed Multi-Touch Emulation on Small Devices”, ACM Symposium on User Interface Software and Technology (UIST Poster), Victoria, 2009
- **S. Hwang**, K. Lee, D. Park, W. Yeo, “Biolin : Current-based Collaborative Musical Interface”, International Conference on Advances in Computer Entertainment Technology (ACE), Greece, 2009
- **S. Hwang**, K. Lee, W. Yeo, “Introducing Current-based Interactive Plant”, ACM SIGGRAPH Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia (SIGGRAPHASIA Poster), Japan, 2009
- G. Go, S. Han, J. Lee, Y. Choi, B. Sun, Y. Park, D. Jung, **S. Hwang**, C. Lim, “Hanmadang : Entertainment Systems for

Massive Face-to-face Interaction", International Conference on Advances in Computer Entertainment Technology (ACE), Japan, 2008

PROJECTS

- Design of new social music sharing service, "Pokem", **SAMSUNG**, 2010
- Design of Rational Inputting System for Worldwide Use, **KT**, 2010
- Social Level based E-Learning System, ITC, **KAIST Institute**, 2009, KAIST
- Mobile UX Design for High Speed Network Environment, Heavy Data Service, **SAMSUNG**, 2008
- Massive Face-to-face Interaction using mobile phone - "You Be a Player!", UbiPlay, **CT Festival**, 2008
- Design of P-Grid System for Efficient Distributed Computing, PLLab, **Kwangwoon Univ**, 2006
- Implementation of Python based BBS, Pybbs with Prof. Lee gang sung, KLDP, **Kwangwoon Univ**, 2003

HONORS AND AWARDS

- **JiSeukYoung Award**, 2010, IP Technology Award, KIPO, Daejeon, Korea
- **The Grand Prize** (Minister of Knowledge Economy Prize), 2010, Creative Invention Contest, KIPA, Seoul, Korea
- **The First Prize** (The Best Invention of This Year), 2009, IP Ocean Contest, KIPA, Seoul, Korea
- **The Silver Prize** (A director of Patent Award), 2009, Korea Invention Patent Exhibition, KINPEX, Seoul, Korea
- **The Gold Prize & Silver Prize**, 2008, Future Web Service Idea Contest, KAIST, Daejeon, Korea
- **Prize For Encouragement**, 2008, Green Campus Contest, KAIST, Daejeon, Korea
- **Director Award**, 2008, Green Energy Eco-electronics Contest, KAIST, Daejeon, Korea
- **Participation Award** from Qualcomm IT Tour, 2006, Qualcomm Headquarter, San Diego, California
- **Best Cum Laude** Pre-MBA 2006, EBS MBA, Seoul, Korea
- **Second Prize**, Engineering design Contest, 2003, Kwangwoon University, Seoul, Korea
- **Prize For Encouragement**, 2000, Korea Student Patents exhibition, Seoul, Korea

SCHOARSHIPS

- **KAIST Sponsored Scholarship** Mar. 2010 - Present
Merit-based scholarships for one semester (ranked 1)
- **State Sponsored Scholarship** Aug. 2007 – Mar. 2010
Full scholarships for every semester
- **Kwangwoon University Scholarship** Mar.2001 – Aug.2007
Merit-based scholarships for 8 semesters (full scholarships for two, half scholarships for six semesters)

ACTIVITIES

- **First President of Invent Club**, 2010, Korea Advanced Inventor of Science & Technology, KAIST, Daejeon, Korea
- **Mentoring Leadership Program**, 2008, 2009, Counseling Center, KAIST, Daejeon, Korea
- **Global Academy**, 2008, Gaonnuri, Busan, Korea
- **SWELL Advenced Level**, 2007, Seoul Women's University, SWELL, Seoul, Korea
- **Kwangwoon Supporters**, 2007, Kwangwoon University, Seoul, Korea
- **COMDEX KOREA with NETWORLD INTEROP & Seoul GameShow STAFF**, 2003, COMDEX, Seoul, Korea
- **Patent Net Supporters**, 2003, Korean Intellectual Property Office, Seoul, Korea
- **Leadership School**, 2003, Kwangwoon University, Seoul, Korea
- **Hanbit Reporter**, 2002, Hanbit Media, Seoul, Korea

SERVICE

- **Reviewer**, ACM Conference on Human Factors in Computing Systems (CHI2011)
- **Student Member**, ACM, IEEE, ACM SIGCHI
- **Member**, HCI Korea

EXHIBITION

- Simple & Easy to use Musical Instrument Exhibition, AIM Lab, **KT&G Sangsangmadang**, Seoul, Korea (2010.10.08 - 10.24)
- Exhibition for inventions, Korea Invention Patent Exhibition, **KIPO**, COEX, KOREA (2009.12.6 - 12.10)
- Exhibition for inventions, UIC EXPO, Ministry of Educational Science and Technology, **KINTEX**, KOREA (2009.11.5 - 11.7)
- Presentation for a Piece of Work, "Forest in blossom", **The Engineering and Arts Society**, Seoul, Korea (2009.10.10)
- Coworked Exhibition, "LP Player Drum" at Scrapyard Challenge Workshop, **SangSangmadang**, Seoul, Korea (2008.11.27 - 12.30)
- MediaShowcase, **International Conference on Advanced Computer Entertainment Technology**, Yokohama, Japan (2008.12.3 ~ 12.5)
- Exhibition as a Technical Designer, "bor-..ed, narcisse, bar-code" by Yang Ju Hae, **KAIST & National Museum of Contemporary Art**, Daejeon, Korea (2008.11.5 - 12.5)

PATENTS

DOMESTIC PATENTS

PLANT INTERFACE

- 10-2009-0060697 PLANT INTERFACE DEVICE, SYSTEM AND METHOD THEREOF
- 10-2009-0050215 PLANT INTERFACE USING SOLAR BATTERY
- 10-2009-0038610 EDUCATIONAL INTERFACE ON PLANTS FOR CHILDREN

HAPTIC STEERING WHEEL

- 10-2009-0050213 METHOD AND TOOLS OF VIBRO-TACTILE BASED STEERING WHEEL USING MULTI-START POINT
- 10-2009-0033057 CAR NAVIGATION SYSTEM AND METHOD FOR GUIDING DRIVING DIRECTIONS USING HAPTIC STEERING HWEE
- 10-2009-0033055 METHOD AND TOOLS OF VIBRATING STEERING WHEELS FOR CAR NAVIGATION

VIRTUAL THUMB – **Transacted (Technology Transferred)**

- 10-2009-0063803 INPUT METHOD AND TOOLS FOR TOUCH PANEL INCLUDING SHAKING
- 10-2009-0033987 INPUT METHOD AND TOOLS FOR TOUCH PANEL, AND MOBILE DEVICES USING THE SAME
- 10-2009-0039112 GESTURE INPUT METHOD AND TOOLS USING VIRTUAL FINGER
- 10-2009-0040647 INTERACTION METHOD USING PIVOT POINT
- 10-2009-0024702 TOUCH BASED INTERACTION, METHOD AND TOUCH PAD USING THE SAME
- 10-2009-0019296 INPUT METHOD AND TOOLS FOR TOUCH PANEL, AND MOBILE DEVICES USING THE SAME
- 10-2009-0029214 TOUCH SCREEN CONTROL METHOD, TOUCH SCREEN APPARATUS AND PORTABLE SMALL ELECTRONIC DEVICE
- 10-2009-0029213 TOUCH BASED INTERFACE DEVICE, METHOD AND MOBILE DEVICE AND TOUCH PAD USING THE SAME
- 10-2009-0014769 TECHNIQUE AND METHOD FOR ONE-HANDED MOBILE INTERACTION
- 10-2009-0015567 TOOLS FOR SENSING THE TOUCH SPACE AND POSITION ON MOBILE DEVICES

MULTI-TOUCH BASED VIRTUAL FINGERS - **Transacted (Technology Transferred)**

- 10-2009-0088545 INPUT METHOD AND TOOLS FOR MULTI-TOUCH PANEL

FROST DISPLAY

- 10-2009-0022539 THE METHOD AND APPARATUS OF DISPLAY USING A FROST

PUFF SENSOR FOR DETECTING DIRECTION

- 10-2009-0036919 CONTROL METHODS AND DEVICE FOR SENSING DIRECTION OF PUFF AS MOBILE INTERFACE

HEAD TRACKING METHOD ON MOBILE ENVIRONMENT

- 10-2008-0108033 USER INTERACTION USING HEAD TRACKING ON MOBILE ENVIRONMNET

MULTI TOUCH BASE KOREAN CHARATER INPUT SYSTEM - **Transacted (Technology Transferred)**

- 10-2009-0073627 APPARATUS AND METHOD FOR INPUTTING KOREAN CHARACTERS USING MULTI-TOUCH SCREEN
- 10-2009-0060063 METHOD FOR INPUTTING KOREAN CHARACTERS USING MULTI-TOUCH SCREEN
- 10-2009-0130326 METHOD AND MEDIUM FOR INPUTTING KOREAN CHARACTERS FOR TOUCH SCREEN
- 10-2009-0105966 METHOD AND MEDIUM FOR INPUTTING KOREAN CHARACTERS USING TOUCH SCREEN, APPARATUS FOR INPUTTING KOREAN CHARACTERS AND MOBILE DEVICE COMPRISING THE SAME
- 10-2009-0130325 METHOD AND MEDIUM FOR INPUTTING KOREAN CHARACTERS USING TOUCH SCREEN, APPARATUS FOR INPUTTING KOREAN CHARACTERS AND MOBILE DEVICE COMPRISING THE SAME
- 10-2010-0002913 METHOD AND APPARATUS FOR INPUTTING KOREAN CHARACTERS USING TOUCH SCREEN, AND MOBILE DEVICE COMPRISING THE SAME
- 10-2010-0000141 APPARATUS AND METHOD FOR INPUTTING KOREAN CHARACTERS USING MULTI-TOUCH GESTURE
- 10-2010-0000116 METHOD AND MEDIUM FOR INPUTTING KOREAN CHARACTERS USING TOUCH SCREEN, APPARATUS FOR INPUTTING KOREAN CHARACTERS AND MOBILE DEVICE COMPRISING THE SAME

KOREAN INPUTTING SYSTEM BASED UPON FISHEYE EFFECT

- 10-2010-0057477 DEVICE AND METHOD FOR INPUTTING KOREAN CHARACTERS ON TOUCHSCREEN BASED UPON FISYEYE EFFECT, AND ELECTRONIC DEVICE USING THE SAME
- 10-2010-0048900 DEVICE AND METHOD FOR INPUTTING KOREAN CHARACTERS ON TOUCHSCREEN BASED UPON CONSONANT-VOWEL CONVERSION, AND ELECTRONIC DEVICE USING THE SAME
- 10-2010-0082861 A DEVICE AND METHOD FOR INPUTTING TOUCH PANEL INTERFACE, AND A DEVICE AND METHOD FOR INPUTTING MOBILE DEVICE USING THE SAME
- 10-2010-0099065 A DEVICE AND METHOD FOR INPUTTING KOREAN CHARACTER, AND MOBILE DEVICE USING THE SAME

KOREAN INPUTTING SYSTEM USING TILT SENSOR

- 10-2010-0102547 A DEVICE AND METHOD FOR INPUTTING KOREAN CHARACTER, AND MOBILE DEVICE USING THE SAME

SCANABLE TABLE TOP INTERFACE

- 10-2009-0000000 METHOD AND APPARATUS OF SCANNING THE OBJECT ON THE TABLE TOP INTERFACE - [ING]

STYLUS PEN FOR MULTI-TOUCH BASED INPUT DEVICE

- 10-2009-0054712 METHOD AND APPARATUS OF USING STYLUS PEN ON MULTI-TOUCH ENVIRONMENT

NON-LINEAR TIMELINE BAR

- 10-2009-0054712 CURVED TIMELINE BAR

CANVAS FOR SONIFICATION

- 10-2009-0090833 APPARATUS AND METHOD OF INTERACTING WITH CANVAS

CIRCULAR CONTROL BAR

- 10-2009-0068299 APPARATUS AND METHOD OF USING CIRCULAR CONTROL BAR

GRADUAL TRANSLATION PUSH SYSTEM

- 10-2009-0000000 APPARATUS AND METHOD OF SHAKING BASED TRANSLATION LEVEL CONTROL

DYNAMIC CONTROLLER

- 10-2009-10-2009-0068297 CONTROL METHOD AND DEVICE FOR TOUCH PANEL, AND MOBILE DEVICES USING THE SAME

DIVISION METHOD ON TOUCH-PANEL

- 10-2009-0078505 METHOD AND DEVICE FOR CONTROLLING TOUCH SCREEN, AND PORTABLE ELECTRONIC DEVICES USING THE SAME

CONTROL PUBLIC DISPLAY USING MULTITOUCH BASED HANDHELD DEVICE

- 10-2009-0002912 A DEVICE AND SYSTEM FOR CONTROLLING PUBLIC DISPLAY, MOBILE DEVICE USING THE SAME

SCALE CHARGER

- 10-2010-0018398 A DEVICE FOR CHARGING MOBILE DEVICES, AND METHOD FOR CHARGING MOBILE DEVICE USING THE SAME

AUGMENTED REALITY BY FISHEYE DISTORTION

- 10-2010-0022930 THE APPARATUS OF AUGMENTED REALITY USING FISHEYE LENS AND THE METHOD OF THE SAME
- 10-2010-0068905 A METHOD AND DEVICE FOR DISPLAY OF ELECTRONIC DEVICE USING FISH-EYE LENS AND HEAD TRACKING, AND MOBILE DEVICE USING THE SAME

BON CONDUCTIVE EARFACE

- 10-2010-0048900 BONE CONDUCTIVE EARPHONE, HEADPHONE, AND OPERATION METHOD OF MEDIA DEVICE USING THE SAME

PSUEDO PRESSURE SENSITIVE TOUCH

- 10-2010-0067022 INPUT METHOD AND DEVICE FOR USER TERMINAL HAVING TOUCH SCREEN, RECORDING MEDIUM FOR THE SAME AND USER TERMINAL COMPRISING THE SAME
- 10-2010-0067023 INPUT METHOD AND DEVICE FOR USER TERMINAL HAVING TOUCH SCREEN, RECORDING MEDIUM FOR THE SAME AND USER TERMINAL COMPRISING THE SAME BASED ON THE TOUCH POSITION

INTERACTION METHOD FOR FAN

- 10-2010-0068237 ELECTRIC FAN WITH IR SENSOR AND METHOD OF CONTROLLING ELECTRIC FAN

VIBROTACTILE BASED COMMUNICATION MEHTOD ON SOCIAL NETWORK ENVIRONMENT

- 10-2010-00250787 SERVER, USER DEVICE FOR SOCIAL NETWORK SERVICE, AND METHDO FOR SOCIAL NETWORK SERVICE

DOMESTIC PATENTS (PCT)

VIRTUAL THUMB - Transacted (Technology Transferred)

- PCT/KR2009/002962 TOUCH BASED INTERFACE DEVICE, METHOD AND MOBILE DEVICE AND TOUCH PAD

PLANT INTERFACE

- PCT/KR2010/002749 PLANT INTERFACE DEVICE, SYSTEM AND METHOD THEREOF

PSEUDO INTERACTION

- PCT/KR2010/000000 INPUT METHOD AND DEVICE FOR USER TERMINAL HAVING TOUCH SCREEN

FISHEYE LENS

- PCT/KR2010/000000 A METHOD AND DEVICE FOR DISPLAY OF ELECTRONIC DEVICE USING FISH-EYE LENS AND HEAD TRACKING

TEACHING

- Teaching Assistant, **Freshman Design Course**, KAIST Jun. 2010 – Aug. 2010

INVITED TALK

- Invited Talk, "Research and Invention tips for students in science and technology", 12/24/2010, **Gajwa High School**, Seoul, Korea
- Representative Presentation, "Introduction to Non-linear Timeline Bar", 12/22/2010, **KIPA**, Seoul, Korea
- Invited Talk, "Interdisciplinary Approach: Vibro-tactile based Navigation", Convergence Cafe, 12/14/2010, **KOFAC**, KAIST, Daejeon, Korea
- Invited Lecture, "Invent Your Future", 11/20/2010, **KIPA Camp**, Seoul, Korea
- Workshop Talk, "Spread your ideas to the World", 11/13/2010, **KIPA**, Seoul, Korea
- Invited Talk, "Design Issues in Human Computer Interaction", 6/21/2010, **Ahn Graphics**, Seoul, Korea
- Invited Seminar, "Research Apportunities of New Interaction Method to 3D Display", 4/11/2010, **3DRC**, Seoul, Korea
- Invited Talk, "Introduction to Multi-touch based Korean inputting system ", 3/31/2010, **KIPA**, Seoul, Korea
- Guest Talk, "What is in Your Archive?", 3/27/2010, **TEDxKwangwoon**, Seoul, Korea
- Invited Talk, "Delicious study, Happy Research", 3/24/2010, **Soon Chun Hyang Univ**, ChoongNam, Korea

SKILLS & CERTIFICATIONS

- **Licenses** : Microsoft Office Specialist (Word, Excel, PowerPoint), Certified Member of Mensa, Certified Master of Information Processing, SCJP (Sun Certified Java Programmer) 5.0
- **Languages** : C, C#, Objective-C, C++, PHP, ASP, Java, Python, ActionScript, Processing, Arduino, and ETC.
- **Other Experience** : OpenCV, Tweepy, VxWorks, NachOS, Java3D, MySql, and ETC
- **UX Methods** : Paper Prototype, Focus Group Interview, Cognitive Walkthrough, and ETC.
- **Analysis Tool**: EXCEL, SPSS, Ucinet, Netminer, and ETC

INTERVIEWS OR WORKS APPEARING IN

TV

- **MBC, YTN, KBS News**, "Young Inventor earned \$500,000 through 'VirtualThumb' technology", 2010, Seoul, Korea
- **Science Cafe**, "Gifted people to be a Davinchi", 2010, Seoul, Korea
- **MBN News**, "Promote hidden inventions", 2010, Seoul, Korea
- **Samsung News**, "Outstanding person for Samsung", 2010, Seoul, Korea
- **KBS Documentary**, "You, young guy", 2010, Seoul, Korea
- **EBS News People**, "This year's intellectual property winner, Mr. Hwang", 2010, Seoul, Korea
- **MBN News**, "Faster Korean Inputting System.", 2009, Seoul, Korea
- **itsTV News**, "What is the best invention of this year among the entire universities?", 2009, Seoul, Korea
- **MBC Newstoday**, "Faster Korean Inputting System on Mobile devices", 2009, Seoul, Korea
- **YTN NewsOn**, "Patent first, Paper last!", 2009, Seoul, Korea
- **YonHapNews**, "Popular talkative plant", 2009, Seoul, Korea
- **Special Issue HD Documentary**, "The brains who change the world", 2009, Seoul, Korea

NEWSPAPER

- "Interview with Mr. Hwang who invented 'VirtualThumb' technology", 2010, **KAIST Times**, Seoul, Korea
- "CT Interview with Mr. Hwang", 2010, **CT Press**, Seoul, Korea
- "Zooming in and out with only one finger", IT Science, 2010, **ETNews Press**, Seoul, Korea
- "Ideas brought five hundred million won", People 31 page, 2010, **Donga Press**, Seoul, Korea
- "Graduate student earns five million won through one idea ", 2010, **Chosun Press**, Seoul, Korea
- "Delicious study", 2010, **Chosun Press**, Seoul, Korea
- "People in CT : Dreaming of Reorganizing the culture at the front line of technology", 2010, **CT PRISM**, Daejeon, Korea
- "Very good guy, Mr. Hwang", 2010, **KAIST News Letter**, Daejeon, Korea
- "This year's intellectual property award winner, Mr. Hwang", 2009, **Enews, Newsis, Digital Times, MK Press**, Seoul, Korea
- "Honor student, Edison", 2009, **Donga Press**, Seoul, Korea
- "Geek guy who wanted to be Edison", 2009, **Donga Press**, Seoul, Korea
- "A special class in KAIST", 2009, **HelloDD**, Daejeon, Korea
- "Passion can exceed the talent", 2009, **Kwangwoon Univ Press**, Seoul, Korea
- "Romantic Engineer's IT Story" Column, 2008, Sony, **dreamersclub**, Seoul, Korea
- "Beautiful Market", 2007, **Newsis**, Seoul, Korea
- "Outstanding Korean Students visited Qualcomm Headquarters", 2006, **Digital Times**, Seoul, Korea
- "I wanna be an inventor, someday!", 2005, Science **News Paper**, Seoul, Korea

MAGAZINE

- Special Issue on Invention, "Invent.", "Ideas are our Resources.", 2010, **JayooMadang**, Seoul, Korea

RADIO

- Live broadcast, "Han SuJin's Today", Interview, 2010, **SBS RADIO**, Seoul, Korea
- Live broadcast, "Son SeokHee's Focus", Mini Interview, 2010, **MBC RADIO**, Seoul, Korea
- Live broadcast, "Pang Pang News", 2010, **KBS RADIO**, Daejeon, Korea
- Live broadcast, "Radio Mento", 2010, **EBS RADIO**, Seoul, Korea
- Live broadcast, "Knowledge over the World" Interview, 2010, **KBS RADIO**, Seoul, Korea