

Keita Higuchi, Ph.D.

Project Research Associate
Institute of Industrial Science
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Education

Ph.D. in Information Studies

Apr. 2012 to Jul. 2015

Human-Computer Interaction Lab (Rekimoto Lab), Applied Computer Science Course

Graduate School of Interdisciplinary Information Studies, The University of Tokyo

Title of thesis: "Human Body Mapping and Augmentation for Immersive Telepresence Systems"

Thesis committee: Prof. Jun Rekimoto, Prof. Ken Sakamura, Prof. Noboru Koshizuka, Prof. Aki Nakao, and Prof. Yoichi Sato

Master degree in Arts and Sciences (Information Studies)

Apr. 2010 to Mar. 2012

Human-Computer Interaction Lab (Rekimoto Lab), Applied Computer Science Course

Graduate School of Interdisciplinary Information Studies, The University of Tokyo

Title of master thesis: "Flying Eyes: Free-Space Content Creation Using Autonomous Aerial Vehicles"

Adviser: Prof. Jun Rekimoto.

Bachelor degree in Information Engineering

Apr. 2006 to Mar. 2010

Intelligent Computing for Humanity Lab

Kanazawa Institute of Technology

Title of bachelor thesis: "Puppet Grip: Gestural Interaction for Spatial Co-working Experience"

Adviser: Prof. Ryuichiro Hara

Work Experience

Project Research Associate @ Institute of Industrial Science, The University of Tokyo

[Aug. 2015 to **present**]

Yoichi Sato Lab (Computer Vision Group)

Research Assistant @ Sony Computer Science Laboratories, Inc. [Apr. 2015 to Jul. 2015]

Mentor: Jun Rekimoto

Research Internship @ Microsoft Research Redmond [Jun. 2014 to Aug. 2014]

Multimedia, Interaction, and Communication (MIC) Group

Mentor: Yinpeng Chen, Philip A. Chou, Zhengyou Zhang

Research Internship @ Microsoft Research Redmond [Jun. 2013 to Sept. 2013]

Multimedia, Interaction, and Communication (MIC) Group

Worked on immersive telepresence project for whiteboard collaboration (<http://youtu.be/pBny6KfGreU>)

Mentor: Yinpeng Chen, Zicheng Liu, Philip A. Chou, Zhengyou Zhang

Research Fellow @ Japan Society for the Promotion of Science [Apr. 2012 to Mar. 2015]

Free-Space Video Content Creation using Flying Robotic System (Grant 900.000 Yen / Year)

Main Creator @ IPA (Information-Technology Promotion Agency) [Jan. 2011 to Oct. 2011]

2010 Exploratory IT Human Resources Project (The MITOH Program)

Out-of-Body Vision: Extrabody Video Contents Creation Using Autonomous Aerial Vehicles

Research Assistant @ Laboratory for Adaptive Intelligence, RIKEN [Oct. 2011 to Mar. 2012]

Substitutional Reality System Team with Dr. Naotaka Fujii

Research Assistant @ Morpho Inc [May 2010 to Mar. 2012]

Research and Development (<http://www.morphoinc.com/en/>)

Publications

Proceedings

1. Keita Higuchi, Tetsuro Shimada and Jun Rekimoto, **Flying Sports Assistant: External Visual Imagery Representation for Sports Training**, Proceedings of Augmented Human (AH2011), 2011.
2. Keita Higuchi, Yoshio Ishiguro and Jun Rekimoto, **Flying Eyes: Free-Space Content Creation Using Autonomous Aerial Vehicles**, CHI 2011, Extended Abstract (alt.chi), 2011.
3. Shingo Yamano, Takamitsu Hamajo, Shunsuke Takahashi, Keita Higuchi, EyeSound: Single-Modal Mobile Navigation Using Directionally Annotated Music, Proceedings of Augmented Human (AH2012), 2012.
4. Keita Higuchi, Jun Rekimoto. **Flying Head: A Head Motion Synchronization Mechanism for Unmanned Aerial Vehicle Control**, CHI 2013 Extended Abstracts (alt.chi), 2013.

5. Keita Higuchi, Katsuya Fujii, Jun Rekimoto, **Flying Head: A Head-Synchronization Mechanism for Flying Telepresence**, The 23rd IEEE International Conference on Artificial Reality and Telexistence (ICAT2013), 2013.
6. Katsuya Fujii, Keita Higuchi, Jun Rekimoto, **Endless Flyer: A Continuous Flying Drone with Automatic Battery Replacement**, The 10th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC2013), 2013.
7. Kei Nitta, Keita Higuchi, Jun Rekimoto, HoverBall : Augmented Sports with a Flying Ball, Proceedings of Augmented Human (AH2014), 2014
8. Keita Higuchi, Michihiko Ueno, Jun Rekimoto, **Scarecrow: Avatar Representation using Biological Information Feedback**, The 2014 IEEE International Conference on Cyber, Physical and Social Computing (CPSCom2014), 2014.
9. Keita Higuchi, Yinpeng Chen, Philip A Chou, Zhengyou Zhang, Zicheng Liu, **ImmerseBoard: Immersive Telepresence Experience using a Digital Whiteboard**, Proceedings of CHI 2015, 2015.
10. Kei Nitta, Keita Higuchi, Yuichi Tadokoro, Jun Rekimoto, **Shepherd Pass: Ability Tuning for Augmented Sports using Ball-Shaped Quadcopter**, The 12th International Conference on Advances in Computer Entertainment Technology (ACE2015), 2015.
11. Keita Higuchi, Ryo Yonetani, and Yoichi Sato, **Can Eye Help You?: Effects of Visualizing Eye Fixations on Remote Collaboration Scenarios for Physical Tasks**, Proceedings of CHI 2016.
12. Hiroshi Kera, Ryo Yonetani, Keita Higuchi, and Yoichi Sato, **Discovering Objects of Joint Attention via First-Person Sensing**, IEEE CVPR Workshop on Egocentric Vision (EGOV2016), 2016.
13. Keita Higuchi, Ryo Yonetani, and Yoichi Sato, **EgoScanning: Quickly Scanning First-Person Videos with Egocentric Elastic Timelines**, Proceedings of CHI 2017.

Journals

14. Katsuya Fujii, Keita Higuchi, Jun Rekimoto, **Endless Flyer: A Continuous Flying Drone with Automatic Battery Replacement**, Journal of the Information Processing Society of Japan, Vol.55, No.8, (2014. 8).
15. Keita Higuchi, Jun Rekimoto, **A Flying Telepresence Platform to Augment Moving Sensation**, Transaction of The Virtual Reality Society of Japan, Vol.19, No.3, (2014. 9).

Demonstration and Talk

16. Keita Higuchi, Jun Rekimoto, Flying Head: Head-synchronized Unmanned Aerial Vehicle Control for Flying Telepresence, SIGGRAPH Asia 2012 Emerging Technologies, 2012.
17. Natsumi Asahara, Keita Higuchi, Soramichi Akiyama, Shinichi Honiden Mobile Augmented Reality Gaming for Daily Activity Learning and Satisfaction , Demonstration at ACM CHI 2015 Symposium on Emerging Japanese HCI Research Collection (in conjunction with CHI 2015), 2015.

Awards

1. University President Commendation for undergraduate, Kanazawa Institute of technology, 2011
2. Outstanding Master Thesis Award, Graduate School of Interdisciplinary Information Studies, The University of Tokyo, 2011
3. SIGGRAPH Asia 2012 Emerging Technologies Prize (Best Demonstration Award)

Grants

1. 2010, Exploratory IT Human Resources Project (The MITOH Program), 2,073,600 Yen
2. 2012 to 2015, Grant-in-Aid for JSPS Fellows Number 24-10424 (KAKENHI), 900,000 Yen / Year
3. 2016, AIP Challenge, JST CREST, 1,000,000 Yen

Technical Skills

Programming languages: C, C++, Scheme (Gauche), Java, Ruby, Python, Javascript, R.

Programming Environments: Visual Studio, Processing, Ardiono, Emacs+bash, Ecipse, Cuda.

Toolkits: OpenCV, Kinect SDK, OpenGL, Unity, OpenCV. Android SDK, ARToolkit.