

KENT FUJIWARA, PH.D.

Home

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Work: The University of Tokyo, Institute of Industrial of Science

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Education

- **The University of Tokyo** — Tokyo, Japan
Ph.D.: April 2009 – March 2013
 - Department of Information and Communication Engineering, Graduate School of Information Science and Technology
 - Thesis title: Non-rigid Registration for Shape Analysis
 - Supervisor: Professor Dr. Katsushi Ikeuchi
- **The University of Tokyo** — Tokyo, Japan
M.E.: April 2007 – March 2009
 - Department of Information and Communication Engineering, Graduate School of Information Science and Technology
 - Thesis title: Simultaneous Non-rigid Registration of Multiple Objects
 - Supervisor: Professor Dr. Katsushi Ikeuchi
- **Keio University** — Kanagawa, Japan
B.A.: April 2003 – March 2007
 - Faculty of Environmental Information
 - Research Interests : Archaeology, Japanese Swords, Bronze Mirrors
 - Graduation Project : Analysis of Japanese Ancient Bronze Mirrors using Range Data
 - Advisor: Professor Dr. Koichi Furukawa

Research Experience

- **The University of Tokyo, Ikeuchi Laboratory** — Tokyo, Japan
Master & Ph.D. course: April 2007 – Present
 - **Non-rigid Registration of Intra-class Shapes for Fine Grain Analysis**
 - ✓ Proposed a registration method based on locally rigid globally non-rigid registration.
 - ✓ Conducted experiments using 2D contour data from silhouette image database. (simple test in Python, implementation in C++ with OpenCV, visualization in Matlab).
 - ✓ Compared the accuracy of results with other registration methods to demonstrate the effectiveness of the proposed method (implementation in C++).
 - ✓ Provided source code to lab members and added functions (code management using git). Source code of current research to be released on the homepage above.
 - ✓ Conducted experiments using 3D point cloud data to verify the applicability of the method to 3D data (implementation in C++).
 - **Registration and Analysis of 3D Data of Archaeological Artifacts**

- ✓ Scanned objects such as bronze mirrors, statues, etc. using various range sensors.
- ✓ Developed software for alignment of 3D point cloud data (implementation in C++ with Qt).
- **Keio University** — Kanagawa, Japan
Undergraduate: April 2003 – March 2007
 - **Development of Japanese Swords Digital Archives**
 - ✓ Collaborated with a Japanese swordsmith to develop a novel scanner for digitization of Japanese Swords.
 - ✓ Edited and adjusted images of Japanese Swords (Adobe Photoshop and Illustrator).
 - **Analysis of Ancient Bronze Mirrors**
 - ✓ Collaborated with Curators at Kyushu National Museum to analyze digitized data of bronze mirrors.
 - ✓ Conducted rigid registration of 3D point cloud data of bronze mirrors
 - ✓ Visualized the difference between 3D point cloud data (implementation and modification of C++ code).

Selected Publication

- **K. Fujiwara**, K. Nishino, J. Takamatsu, K. Ikeuchi, "Non-rigid Registration with Local Rigid Transformations," *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2012 (submitted).
- **K. Fujiwara**, K. Nishino, J. Takamatsu, B. Zheng, K. Ikeuchi, "Locally Rigid Globally Non-rigid Surface Registration," *Proceedings of IEEE International Conference on Computer Vision (ICCV)*, pg. 1527 - 1534, 2011.
- A. Ide, K. Manabe, H. Shimizu, M. Sugawa, **K. Fujiwara**, T. Aoki, H. Yasuda, "Technology for Digitalizing Pictorial Data of Japanese Swords," *Proceedings of the 38th Annual Hawaii International Conference on System Sciences, HICSS-2005(IEEE)*, pg.102 - 108, 2005.
- A. Ide, K. Manabe, **K. Fujiwara**, "An Outline of the Project for Digitally Archiving Japanese Swords," *IPSI-2005-Venice*, 2005.

Experience

- **The University of Tokyo** — Tokyo, Japan
Research Assistant: April 2010 – March 2012, January 2013 – March 2013.
 - Supported by the Global Center of Excellence Program, Japan Society for the Promotion of Science.
- **Ippyo, LLC** — Tokyo, Japan
Website Developer, Editor: April 2007 – September 2008
 - Website development (HTML/CSS) and content production.

Skills and Qualifications

- **Operating Systems:** Mac OS X and Windows 98/2000/XP/Vista/7.
- **Computer Languages:** C++, Java, Matlab, LaTeX. Experience in Python, PostgreSQL, HTML5, CSS2/3.
- **Tools and Systems:** Eclipse, Microsoft Visual Studio, Vim, Git, CMake, OpenCV, and Qt.
- **Languages:** Japanese, English, (TOEFL CBT: 286/300), French, German (Conversational Level).