HIKARU IKUTA

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GitHub: https://github.com/woodrush Website: http://woodrush.github.io/

SUMMARY OF QUALIFICATIONS

- **Machine Learning-based Image Style Transfer R&D:** 1.5 years of experience of machine learning R&D at DWANGO Co., Ltd. / UEI Research. Results published and presented as the first author as a **Technical Brief in SIGGRAPH ASIA 2016**.
- **Software Development:** Brief summary of past jobs/internships:
  - Implemented a photorealistic hair shader for a 3DCG rendering engine in C++ based on a SIGGRAPH paper.
  - Developed modules for the deep learning framework NNabla.
- **Communication Skills:** Native fluency in English and Japanese. Have lived in California for over five years. Completed a three-month business internship with Appbackr, inc., based in Palo Alto.

EDUCATION

Ph.D Student in Information Science and Technology, The University of Tokyo
Tokyo, Japan, *Sep. 2018 - Present*
Supervisor: Prof. Kiyoharu Aizawa, Major: Information and Communication Engineering

MA in Information Science and Technology, The University of Tokyo
Tokyo, Japan, *Apr. 2015 - Mar. 2017*
Supervisor: Assoc. Prof. Koji Tsumura, Major: Information Physics and Computing

BS of Engineering, **Keio University**
Kanagawa, Japan, *Apr. 2011 - Mar. 2015*
Supervisor: Prof. Shuichi Adachi, Major: Applied Physics and Physico-Informatics

SELECTED PUBLICATIONS

International conferences (peer-reviewed)

- **H. Ikuta, K.** Ogaki, and Y. Odagiri, Blending Texture Features from Multiple Reference Images for Style Transfer, ***ACM SIGGRAPH Asia Technical Briefs***, Article No. 15, 2016.
  Project Website: https://dmv.nico/ja/casestudy/neural_style_synthesizer/
- **H. Ikuta**, M. Inoue, and S. Adachi, Robust Bifurcation Analysis for a Genetic Controller Design Problem for Cell Fate Control, *4th IFAC Conference on Analysis and Control of Chaotic Systems*, vol. 48, No. 18, pp. 53–58, 2015.
- **H. Ikuta**, M. Inoue, J. Imura, and S. Adachi, Robust Hyperbolicity of Multiple Equilibria and Analysis of the Cellular Reprogramming Process, *Proceedings of the European Control Conference,* 2015.

Journals (peer-reviewed)

- M. Inoue, **H. Ikuta**, S. Adachi, J. Imura, and K. Aihara, A Computational Method for Robust Bifurcation Analysis and Its Application to Biomolecular Systems, *International Journal of Bifurcation and Chaos*, vol. 25, No. 7, 2015.

PROFESSIONAL EXPERIENCE

RESEARCH INTERN, Microsoft Corporation
Tokyo, Japan, *Jun. 2019 – Nov.2019 (Internship)*

- Conducted experiments using 3D point cloud data of Preah Vihear Temple, a World Heritage Site located in Cambodia
- Results published as a workshop paper at the *3rd ACM SIGSPATIAL International Workshop on Geospatial Humanities*

RESEARCH ENGINEER, Sony Corporation
Tokyo, Japan, *Apr. 2017 - Aug. 2018*

- Full-time position in machine learning R&D
- Developer team of *Neural Network Libraries* (https://github.com/sony/nnabla), reading academic papers and implementing neural network layers using Python, C++ and CUDA

MACHINE LEARNING & COMPUTER VISION R&D, DWANGO Co., Ltd. (UEI Research)
Tokyo, Japan, *Oct. 2015 - Mar. 2017 (Internship)*

- Developed a texture transfer method for images based on deep neural networks in Python
- Results presented as a Technical Brief in SIGGRAPH ASIA 2016

3D COMPUTER GRAPHICS SHADER DEVELOPER, Light Transport Entertainment Inc.
Tokyo, Japan, *Sep. 2015 - Oct. 2015 (Internship)*

- Independently implemented a shader for rendering photorealistic human hair in C++, based on Marschner et al., SIGGRAPH 2003

BUSINESS INTERN, Appbackr Inc.
Palo Alto, CA, *Jun. 2013 - Sep. 2013 (J-1 Visa, Internship)*

- Performed a product demonstration at a demo booth in the 2013 TC3 Summit
- Researched for business partners and organized phone conferences

ANDROID DEVELOPER, Pankaku Inc.
Tokyo, Japan, *Oct. 2012 - Jun. 2013 (Internship)*

- Developed the game server of the Android app “Karitomo SP” using Ruby on Rails
- Implemented JUnit tests for the game UI using Java

TEACHING EXPERIENCE

TEACHING ASSISTANT, Learn.AI (Public AI course at The University of Tokyo)
Aug. 2019 - Present, The University of Tokyo

- Assisted students for using iPython Notebook and other Python-related tasks
- Answered questions related to machine learning

TEACHING ASSISTANT, Lab Class (junior-level, 4 students)
Sep. 2015 - Dec. 2016, The University of Tokyo

- Led two types of lab classes, of circuit theory (implementation of op-amp circuits) and control theory (stabilizing an inverse pendulum) for junior students
- Lectured on control theory and circuit theory

TEACHING ASSISTANT, Undergraduate Project Course (junior-level, 4 students)
Apr. 2016 - Jul. 2016, The University of Tokyo

- Planned course materials to implement a multi-agent system
- Lectured on control theory, OpenCV in C++, and implementation

INSTRUCTOR, Technical Reading and Discussion (senior-level, 4 students)
Apr. 2015 - Jun. 2015, The University of Tokyo

- Lectured basic linear algebra and control theory and led discussions

TEACHING ASSISTANT, Undergraduate Project Course (junior-level, 4 students)
Apr. 2015 - Jul. 2015, The University of Tokyo

- Planned course materials to implement a multiagent system
- Lectured control theory, circuit theory, programming and implementation

CERTIFICATIONS

- TOEFL ITP score: 107 (*Nov. 2015*)
- Applied Information Technology Engineer Examination (*Oct. 2012*)

TECHNICAL ACTIVITIES

- TensorFlow implementation of "A Neural Algorithm of Artistic Style" (L. A. Gatys et al., 2015)
  https://github.com/woodrush/neural-art-tf
  - Released 16 days after the initial release of TensorFlow

TECHNICAL SKILLS

Fields: Machine Learning R&D, Android Development, HTML5, etc.
Languages: Python, C, C++, Java, C#, JavaScript, Ruby, Haskell, etc.
Technologies: Linux, CUDA, Git, Docker, Travis CI, etc.
Project Samples:

- https://github.com/woodrush/py2hy
- https://blogs.mathworks.com/pick/2014/12/12/obfuscated-matlab-code/

ACTIVITIES

2012 - 2015	Member, Keio Computer Society
2011 - November, 2011	Member, Keio Light Music Society (Big Band Jazz)