

NAOYA MURAMATSU

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1-2 Kasuga, Tsukuba, Ibaraki Pref., Japan

EDUCATION

University of Tsukuba

April 2018 – Present

Master of Information Science

Department of Library, Information and Media Studies, Graduate School of Library, Information and Media Studies

Adviser: Yoichi Ochiai

University of Tsukuba

April 2016 – March 2018

Bachelor of Library and Information Science

College of Knowledge and Library Sciences

Adviser: Yoichi Ochiai

National Institute of Technology, Nagano College

April 2011 – March 2016

Foundation Degree

Department of Electrical and Electronic Engineering

Adviser: Takashi Miyazaki

RESEARCH EXPERIENCE

University of Tsukuba

April 2018 – Present

Master Research

- Developed the robot control system, able to walk even if a few legs are broken using hierarchy Q-learning.

University of Tsukuba

April 2016 – March 2018

Undergraduate Research

- Analyzed reviews of EC site to find out points of variation.
- Developed Sonoliards optimizing the direction of a parametric speaker with a ray tracing algorithm.
- Developed DeepHolo that recognizes 3D objects using a deep neural network and computer-generated holography for convert 3D data to 2D data with depth information.
- Developed DeepWear, a method using deep convolutional generative adversarial networks (DCGANs) for clothes design.

National Institute of Technology, Nagano College

April 2015 – March 2016

Undergraduate Research

- Developed the noise filter that greatly suppresses the influence of radio noise in the indoor position information system using Link Quality Indication (LQI) value of radio waves.

TECHNICAL STRENGTHS

Programming Languages

Python(most fluent), C, C++, Verilog, Shell Script, Ruby, JavaScript, SQL

Machine Learning Libraries

Tensorflow, Keras, Chainer, Scikit-learn, PyTorch

Software

Git, Docker, PyBullet, Processing, Autodesk Fusion360

OS

MacOS, Ubuntu, Windows, FreeNAS, CentOS

Hardware

Arduino, Mbed, PhantomX AX Metal Hexapod

PUBLICATIONS

INTERNATIONAL CONFERENCES (REFEREED)

- **Naoya Muramatsu**, Ooi Chun Wei, Takashi Miyazaki. 2017. Development of High Performance Filter for Indoor Positioning System. In *The 5th IIAE International Conference on Intelligent Systems and Image Processing 2017(ICISIP 2017)*.
- Natsumi Kato*, Hiroyuki Osone*, Daitetsu Sato, **Naoya Muramatsu**, and Yoichi Ochiai. 2018. Deep-Wear: a Case Study of Collaborative Design between Human and Artificial Intelligence. In *Proceedings of the Twelfth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '18)*. ACM, New York, NY, USA, 529-536. DOI: <https://doi.org/10.1145/3173225.3173302> (* Joint first authorship.)
- Chun Wei Ooi, **Naoya Muramatsu**, and Yoichi Ochiai. 2018. Eholo glass: Electroholography glass. A lensless approach to holographic augmented reality near-eye display. In *SIGGRAPH Asia 2018 Technical Briefs (SA '18)*, December 4- 7, 2018, Tokyo, Japan. ACM, New York, NY, USA, 4 pages. DOI: <https://doi.org/10.1145/3283254.3283288>

INTERNATIONAL Posters and Workshops (REFEREED)

- Natsumi Kato, Hiroyuki Osone, Daitetsu Sato, **Naoya Muramatsu**, and Yoichi Ochiai. 2017. Crowd Sourcing Clothes Design Directed by Adversarial Neural Networks. In *NIPS 2017 Workshop (NIPS '17)*.
- **Naoya Muramatsu**, Kazuki Ohshima, Ryota Kawamura, Ooi Chun Wei, Yuta Sato, and Yoichi Ochiai. 2017. Sonoliards: Rendering Audible Sound Spots by Reflecting the Ultrasound Beams. In *Adjunct Publication of the 30th Annual ACM Symposium on User Interface Software and Technology (UIST '17)*. ACM, New York, NY, USA, 57-59. DOI: <https://doi.org/10.1145/3131785.3131807>
- **Naoya Muramatsu**, Chun Wei Ooi, Yuta Itoh, and Yoichi Ochiai. 2017. DeepHolo: Recognizing 3D Objects using a Binary-weighted Computer-Generated Hologram. In *SIGGRAPH Asia 2017 Posters (SA 2017)*, November 27 - 30, 2017, Bangkok, Thailand. ACM, New York, NY, USA, 2 pages. DOI: <https://doi.org/10.1145/3145690.3145725>
- Mose Sakashita, Yuta Sato, Ayaka Ebisu, Keisuke Kawahara, Satoshi Hashizume, **Naoya Muramatsu**, Yoichi Ochiai. 2017. Haptic Marionette: Wrist Control Technology Combined with Electrical Muscle Stimulation and Hanger Reflex. In *SIGGRAPH Asia 2017 Posters (SA 2017)*. ACM, New York, NY, USA, Article 33, 2 pages. DOI: <https://doi.org/10.1145/3145690.3145743>

DOMESTIC CONFERENCES (NOT REFEREED)

- **Naoya Muramatsu**, Tetsuji Satoh, Takayasu Fushimi. 2017. Product Attribute Extraction Method Based on Transition Pattern of Review Point of View. In *Data Engineering and Information Management 2017 (DEIM 2017)*. (in Japanese)

WORK EXPERIENCE

Fixstars Corporation

August 2014 – September 2014

Software Engineer Intern

- Worked on software optimization for the microcomputer of cars.

Fixstars Corporation

August 2016 – December 2016

Software Engineer Intern

- Worked on development of semantic segmentation system for self-driving cars.

Pixie Dust Technologies, Inc.

August 2017 – Present

Software Engineer

- Worked on development of management systems and web applications.

Information-technology Promotion Agency, Japan. Exploratory Software Project (MI-TOU)

June 2018 – March 2019

Creator

- Developed the robot control system, able to walk even if a few legs are broken using hierarchy Q-learning.
- 2,304,000 JPY / nine months.

AWARDS

2018 University of Tsukuba, **President's Award for Students**

2017 DEIM 2017, **Student Presentation Award.**

2015 RoboCupJunior Soccer 2015 in Hokushinetsu Block, **Prize: 3rd**

LINKS

Digital Nature Group

<https://digitalnature.slis.tsukuba.ac.jp/>

GitHub: DenDen047

<https://github.com/DenDen047>