

# Kazuki Otao

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## Personal Information

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## School Information (University of Tsukuba)

TEL (+81) 29-859-1

Address 1-2 Kasuga, Tsukuba, Ibaraki, Japan, 305-8550

## Education

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### Bachelor of Science in Media Sciences and Engineering

University of Tsukuba, Japan (Apr. 2017 to Current) Expected graduation date : Mar. 2019

Digital Nature Group

Researching near-eye see-through display using transmissive mirror device, and aerial image on retroreflective particles with Prof. Yoichi Ochiai

### Associate Degree in Computer Science and Electronic Engineering

National Institute of Technology, Tokuyama College, Japan (Apr. 2012 to Mar. 2017)

Soft Computing Laboratory

Researching a fog display for visualization of adaptive shape-changing flow with Prof. Takanori Koga.

## Publication

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### International Conference with Peer Review

[1] [Kazuki Otao](#), Yuta Itoh, Kazuki Takazawa, Hiroyuki Ozone, and Yoichi Ochiai. 2017. Air Mounted Eyepiece : Optical See-Through HMD Design with Aerial Optical Functions. In Proceedings of the 9th Augmented Human International Conference (AH '18). (to appear)

[2] [Kazuki Otao](#), Yuta Itoh, Hiroyuki Ozone, Kazuki Takazawa, Shunnosuke Kataoka, and Yoichi Ochiai. 2017. Light field blender: designing optics and rendering methods for see-through and aerial near-eye display. In SIGGRAPH Asia 2017 Technical Briefs (SA '17). ACM, New York, NY, USA, Article 9, 4 pages. DOI: <https://doi.org/10.1145/3145749.3149425>

[3] [Kazuki Otao](#) and Takanori Koga. 2017. Mistflow: a fog display for visualization of adaptive shape-changing flow. In SIGGRAPH Asia 2017 Posters (SA '17). ACM, New York, NY, USA, Article 17, 2 pages. DOI: <https://doi.org/10.1145/3145690.3145696>

[4] Shinnosuke Ando, [Kazuki Otao](#), Kazuki Takazawa, Yusuke Tanemura, and Yoichi Ochiai. 2017. Aerial image on retroreflective particles. In SIGGRAPH Asia 2017 Posters (SA '17). ACM, New York, NY, USA, Article 7, 2 pages. DOI: <https://doi.org/10.1145/3145690.3145730>

### Pre-print

[5] Yoichi Ochiai, [Kazuki Otao](#), and Hiroyuki Ozone. 2017. Air Mounted Eyepiece: Design Methods for Aerial Optical Functions of Near-Eye and See-Through Display using Transmissive Mirror Device. ArXiv e-prints (Oct. 2017). arXiv:cs.HC/1710.03889

## Research Interest

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Human-Computer Interaction, Computer Graphics, Virtual Reality, Augmented Reality, Light Field Display, Fog Display, Aerial Imaging System, Interactive Art, Media Art, Metamaterials

## Technical Skills

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I'm expert in especially C# and Unity.

Programming Languages: C, C++, Java, HTML/CSS, Ruby, Python, Swift

Programming Environment: Sublime Text, Visual Studio, Android Studio, Eclipse

Toolkits: Android SDK, Rails, DXLibrary, Bootstrap



# Work Experience

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Student Researcher @ Pixie Dust Technologies, Inc.

Sep. 2017 to Current

Researching extended reality device using transmissive mirror device.

Used Tools : C#, Unity

Unity Engineer @ Unirobot Corporation.

Dec. 2016 to Aug. 2017

Development of facial expression and interface of home robot.

Used Tools : C#, Unity, Java, Android

## My Project (Selected)

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### Air Mounted Eyepiece (2018)

This research presents a head-mounted display using transmissive mirror device as new optical element.

Project Page : <http://digitalnature.slis.tsukuba.ac.jp/2017/09/metamate-glass/>

Youtube : <https://youtu.be/fvUzAeQL9uA>



### Light Field Blender (2017)

This research presents a novel light field display using transmissive mirror device as new optical element.

Project Page : <http://digitalnature.slis.tsukuba.ac.jp/2017/09/metamate-glass/>

Youtube : <https://youtu.be/isgaDS-qXsl>

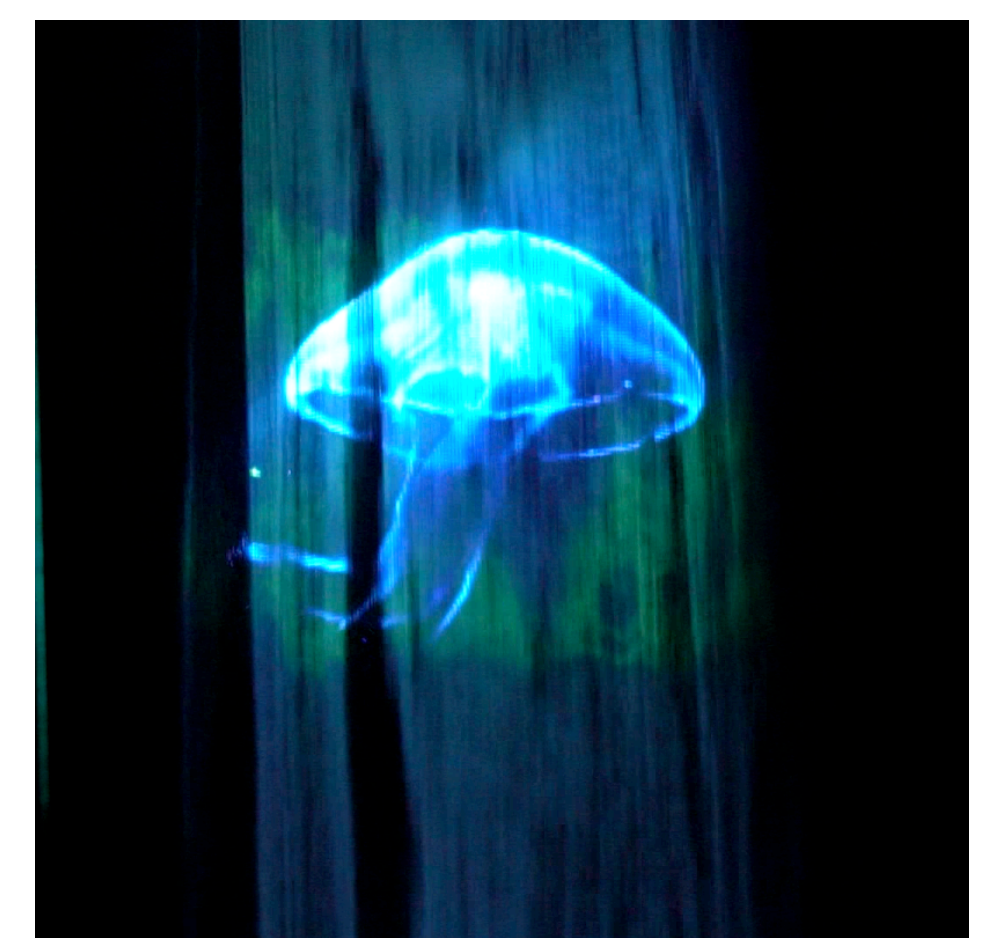


### Aerial Image on Retroreflective Particles (2017)

This research presents a novel method to project aerial image using the transmissive retroreflective particles as aerial screen.

Project Page : <http://digitalnature.slis.tsukuba.ac.jp/2017/11/glassbeads-display/>

Youtube : <https://youtu.be/sLHKTFW9i90>

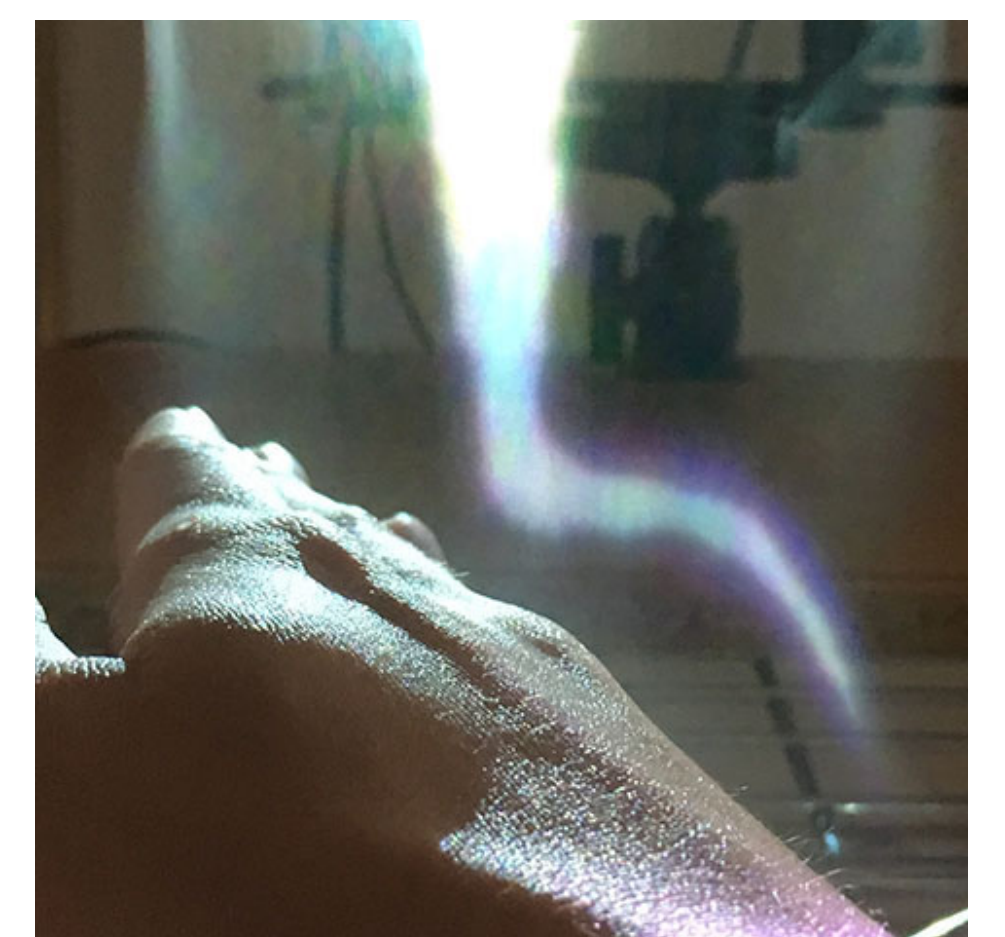


### MistFlow (2016)

This research presents a fog display for visualization of adaptive shape-changing flow.

Project Page : <http://meo-cs.net/works/mistflow/>

Youtube : <https://youtu.be/YwNEVw1YgCY>

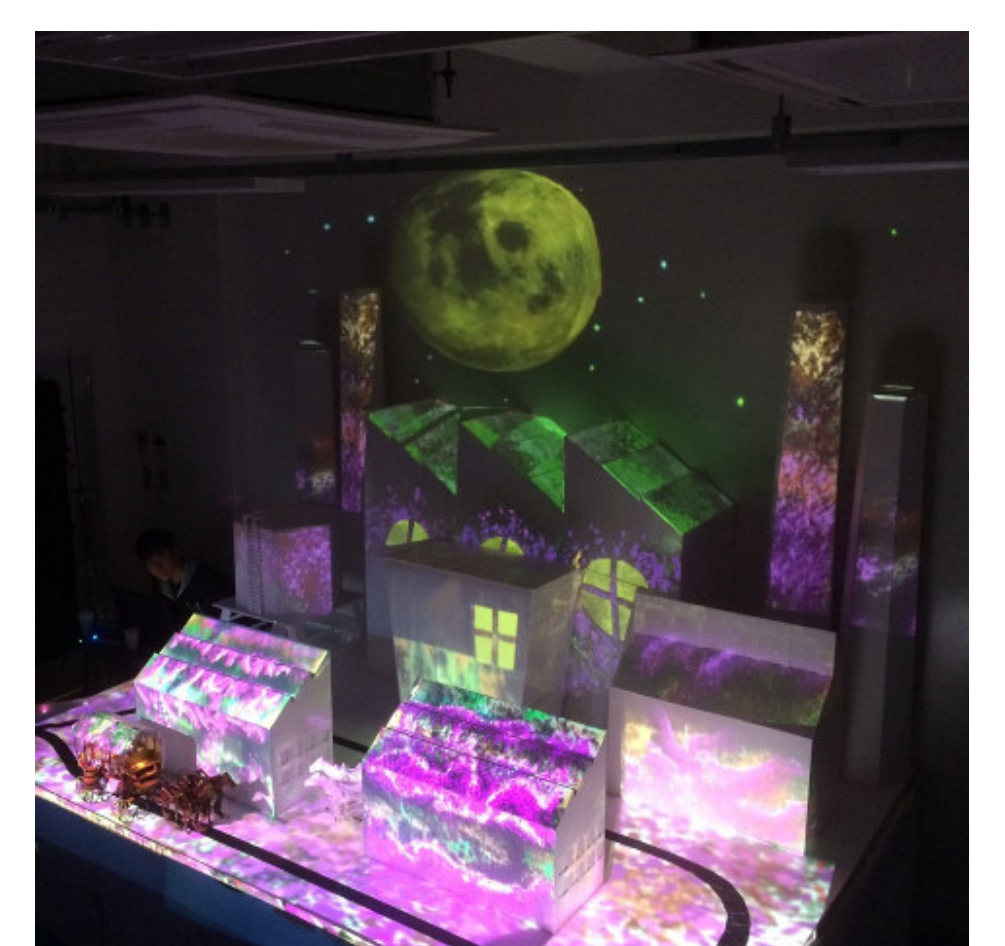


### Re:ink (2015)

This work is an installation in which the image projected by projection mapping is interactively changed by the viewer's interference.

Project Page : <http://meo-cs.net/works/reink/>

Youtube : <https://youtu.be/tylQ3OqYGl4>

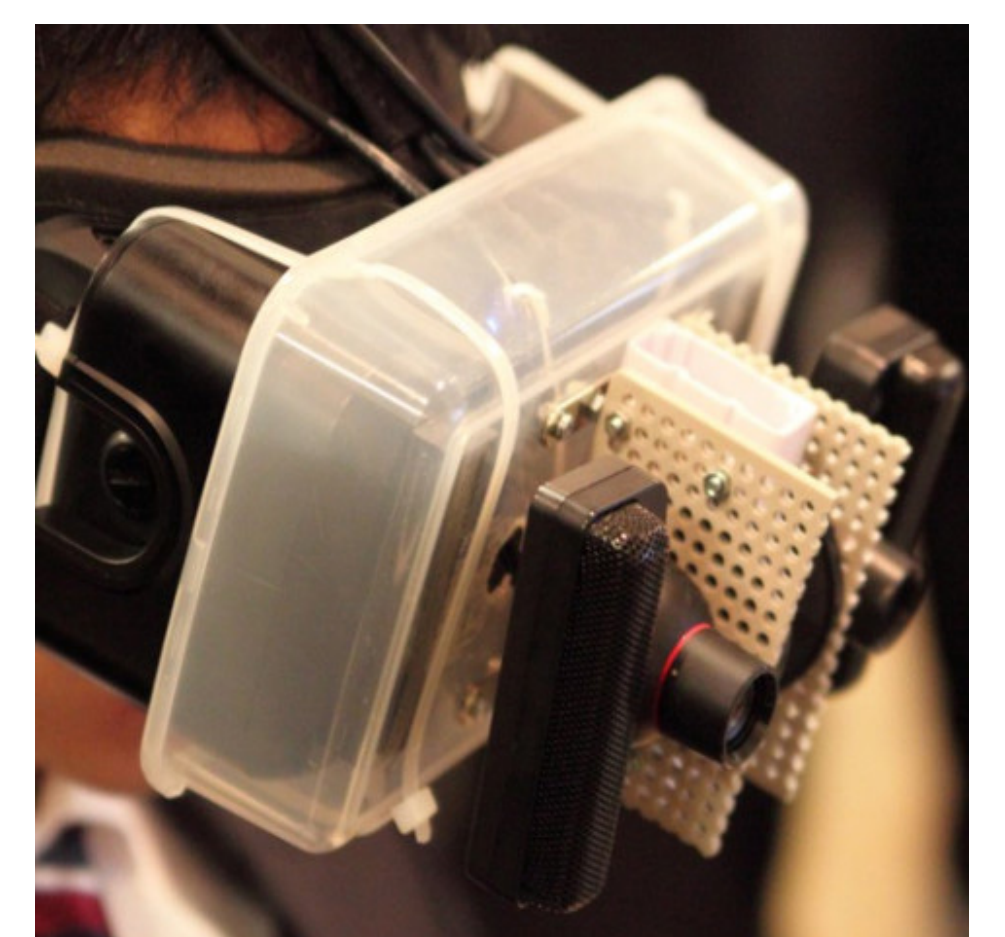


### Pianist (2015)

This work is a system for practicing fingering of keyboard instruments using video see-through HMD and Leap Motion.

Project Page : <http://meo-cs.net/works/pianist/>

Youtube : <https://youtu.be/7xNNoWNeetY> (Japanese Presentation)



## References

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Prof. Yoichi Ochiai [secretary@pixiedusttech.com](mailto:secretary@pixiedusttech.com)

University of Tsukuba / Pixie Dust Technologies, Inc.

Dr. Takayuki Hoshi [star@pixiedusttech.com](mailto:star@pixiedusttech.com)

Pixie Dust Technologies, Inc.

Dr. Taisuke Ohshima [hosono1@gmail.com](mailto:hosono1@gmail.com)

University of Tsukuba / Nature Architects.Inc