

Daniel Eckhoff

Curriculum Vitae

✉ daniel.eckhoff@gmail.com
📄 eckhoff.me

Personal Information

Position Ph.D Student at City University of Hong Kong
Supervisor: Assoc.Prof. Alvaro Cassinelli
Nationality German

Education

2018–2023 **Ph.D in Computer Science**, *City University of Hong Kong, Hong Kong SAR. Until June 2019: Nara Institute of Science and Technology, Japan.*
2015–2018 **Master of Science in Computer Science**, *Carl von Ossietzky University of Oldenburg, Oldenburg, Germany.*
2012–2016 **Bachelor of Science in Computer Science**, *Carl von Ossietzky University of Oldenburg, Oldenburg, Germany.*

Doctoral Thesis

Title *Cognitive and Perceptual Effects Of Augmented Reality Experiences*
Supervisors Assoc. Prof. Alvaro Cassinelli & Prof. Dr. Christian Sandor
Collaborators Prof. Sir Colin Blakemore, Prof. Gladys Cheing, Prof. Julian Lai, Prof. Dr. Jan Schnupp

Master's Thesis

Title *TutAR - Semi-Automatic Generation of Augmented Reality Tutorials for Medical Education*
Supervisors Prof. Dr. -Ing Andreas Hein & Prof. Dr. Christian Sandor

Experience

12.2020- **Teaching Assistant**, *City University of Hong Kong, Augmented Reality.*
04.2021 In this project-based lecture, I taught 27 students how to develop AR applications for the Microsoft HoloLens 2 in Unity and programming in C#. Later, I assisted student groups with their own AR projects.
10.2018- **Computer Graphics Engineer**, *Centre for Applied Computing and Interactive Media Team, Hong Kong.*
09.2019 I was working on CITY IN TIME, an AR application for iOS and Android, that offers Hong Kong residents and visitors a fully immersive way to experience the city's extraordinary geographical and environmental transformation over time via their smartphone.
03.2017- **Research Internship**, *Nara Institute of Science and Technology, Nara, Japan.*
08.2017 I designed and developed an AR medical training system for the Microsoft HoloLens under the supervision of Prof. Dr. Christian Sandor and Prof. Hirokazu Kato as part of my Master's thesis.
08.2015- **Research Internship**, *Nara Institute of Science and Technology, Nara, Japan.*
04.2016 During this research internship I was working on two research projects:

- Design and implementation of an autonomous robot featuring face detection.
- Design and implementation of an autonomous drone for automatic medicine delivery in less accessible rural areas around Japan.

10.2014- **Teaching Assistant**, *University of Oldenburg, Theoretical Computer Science (e.g. Petri Nets, Complexity Analysis, Turing Machines, Computability theory), Introduction to Computer Networks, Freshman Introduction (e.g. Latex introduction, organized visits to various research labs of the university, introduction to the university infrastructure)..*
06.2016

Miscellaneous

07.2016- Japanese studies at the Human Academy Japanese Language School for three months.
10.2016

References

Assoc. Prof. Alvaro Cassinelli
School of Creative Media
City University of Hong kong
✉ cassinelli.alvaro@gmail.com

Prof. Jan Schnupp
Department of Neuroscience
City University of Hong kong
✉ jan_hk@schnupp.net

Prof. Sir Colin Blakemore
Department of Neuroscience
City University of Hong Kong
✉ colin.blakemore@cityu.edu.hk

Prof. Jeffrey Shaw
Academy of Visual Arts
Hong Kong Baptist University
✉ j.shaw@cityu.edu.hk

Prof. Dr.-Ing. Andreas Hein
Department of Health Services Research
University of Oldenburg
✉ andreas.hein@uol.de

Prof. Norihiro Hagita
Ambient Intelligence Laboratory
Nara Institute of Science and Technology
✉ hagita@is.naist.jp

Prof. Hirokazu Kato
Interactive Media Design Laboratory
Nara Institute of Science and Technology
✉ kato@is.naist.jp

Scholarships and Awards

- 2021 HKPFS Academic Excellence Award - Awarded for a continuous CGPA ≥ 3.85
- 2020 HKPFS Academic Excellence Award - See above.
- 2019 Hermine Heusler-Edenhuizen Award - This award is given at the end of each semester to an outstanding paper published by one or several members of the medical faculty of the University of Oldenburg in that semester.
- 2019-2023 Hong Kong PhD Fellowship Scheme (HKPFS) - Most prestigious PhD fellowship in Hong Kong, given to up to 300 applicants per year.
- 2018-2019 Japanese Government (MEXT) Scholarship International Students by University Recommendation. - Given to one applicant per academic year by the university.
- 2018 Best Short Paper Award at ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry.
- 2017 *FIT - International research stays in computer science for master students (FIT weltweit)* from the German Academic Exchange Service - DAAD for a research stay at the Nara Institute of Science and Technology in Japan

Skills

Languages Java, Python, Lisp, C, C#, C++, Objective C, Assembler, PHP, JavaScript
OS macOS, Windows, Linux, Android
Text \LaTeX , Microsoft Office
Databases SQL (MySQL, Oracle)
Miscellaneous Augmented Reality, Computer Vision, Computational Neuroscience, Medical Imaging, Image Processing, Data Science, Embedded Systems, ROS (Robot Operating System), Unity, Unreal, Matlab

Publications

Journals

- In preparation **Daniel Eckhoff**, Christian Sandor, Gladys L. Y. Cheing, Jan Schnupp, and Alvaro Cassinelli. Thermal Pain and Detection Threshold Modulation by Experiencing a Burning Hand in Augmented Reality. In preparation for *Nature Scientific Reports*
- In preparation Björn Friedrich, Lena Elgert, **Daniel Eckhoff**, Jürgen M. Bauer, Andreas Hein. A System for Monitoring the Functional Status of Older Adults in Daily Life for Individualised Rehabilitation Programmes. In preparation for *Science Translational Medicine*
- Christian Lins, **Daniel Eckhoff**, Andreas Klausen, Sandra Hellmers, Andreas Hein, and Sebastian Fudickar. Cardiopulmonary resuscitation quality parameters from motion capture data using differential evolution fitting of sinusoids. *Artificial Intelligence for Mobile Health Data Analysis and Processing*. 2018.

Conference Paper and Poster Paper

- Daniel Eckhoff**, Cecilia Li-Tsang, Gladys Cheing, Alvaro Cassinelli, Christian Sandor. Investigation of Microcirculatory Effects of Experiencing Burning Hands in Augmented Reality. In *2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops*. 2021.
- Daniel Eckhoff**, Alvaro Cassinelli, Christian Sandor. Heat Pain Threshold Modulation Through Experiencing Burning Hands in Augmented Reality In *Adjunct Proceedings of the IEEE International Symposium for Mixed and Augmented Reality*. 2021.
- Daniel Eckhoff**, Christian Sandor, Denis Kalkofen, Ulrich Eck, Christian Lins, and Andreas Hein. Tutar: augmented reality tutorials for hands-only procedures In *Proceedings of the ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry* . 2018. **Best Short Paper Award**
- Daniel Eckhoff**, Alvaro Cassinelli, Christian Sandor. Psychophysical Effects of Experiencing Burning Hands in Augmented Reality In *17th EuroVR International Conference EuroVR 2020*. 2020.

Demos

- Daniel Eckhoff**, Christian Sandor, Denis Kalkofen, Ulrich Eck, Christian Lins, and Andreas Hein. Tutar: semi-automatic generation of augmented reality tutorials for medical education. In *Adjunct Proceedings of the IEEE International Symposium for Mixed and Augmented Reality*. 2018.

Doctoral Consortium

- Daniel Eckhoff**. [DC] Psychophysical Effects of Augmented Reality Experiences. In *2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops*. 2021.
- Daniel Eckhoff**, Christian Sandor, and Alvaro Cassinelli. Exploring Perceptual and Cognitive Effects of Augmented Reality. In *Adjunct Proceedings of the IEEE International Symposium for Mixed and Augmented Reality*. 2019.

Artworks

- 3D Animation with Scientific Annotation - Geometric Representations of Italian Martial Arts (Two Swords). Hing Chao, Jeffrey Shaw, Ricky Lau, **Daniel Eckhoff**, Jacopo Penso. Exhibition: Way of the Sword, Tai Kwun, Hong Kong. 2021.
- Virtual Sculptures. Jeffrey Shaw, Theo Botschuiver, Larry Abel, Joseph Chan, **Daniel Eckhoff**, John Choy. 2019. Exhibition: HKACTION! Act 9 WYSIWYG Jeffrey Shaw Solo Exhibition, Osage Gallery, Hong Kong.

Languages

German **Native speaker**
English **Strong command**
Japanese **Conversational level**
Spanish **Some**

Memberships

IEEE Institute of Electrical and Electronics Engineers
ACM Association for Computing Machinery