RAPHAEL MENGES

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EDUCATION

PhD Student
University of Koblenz-Landau
2016 – Today

M.Sc. Computer Science
Computational Visualistics
University of Koblenz-Landau
Grade 1.1 2014 – 2016

B.Sc. Computer Science
Computational Visualistics
University of Koblenz-Landau
Grade 1.4 2011 – 2014

EXPERTISES

C++, CMake, Python, Java
OpenCV, Tesseract, sklearn
JavaScript, Jekyll, Firebase
OpenGL, GLSL, GPGPU
Eye Tracking
Machine Learning
Computer Vision
Computer Graphics
Blender, Unreal Engine

EXPERIENCE

2018 – **Today. Project Lead.** Institute for Web Science and Technologies.
GazeMining Research Project, with EYEVIDO GmbH.
Clustering and analyzing the user experience on dynamic Web pages.
Funded by the Federal Ministry of Education and Research of Germany.

2016 – **2018. Scientific Employee.** Institute for Web Science and Technologies.
MAMEM Research Project, with seven international partners.
Enabling people with motor impairment the access to the digital world.
Funded by European Union, Horizon 2020 Programme.

DISSERTATION *(under submission)*

Improving Usability and Accessibility of the Web with Eye Tracking
We utilize the interface semantics of a Web page to improve gaze-based analysis and gaze-based interaction with eye tracking in the Web.

TEACHING

2017 – Today **Tutor in Machine Learning and Data Mining**
Classification, clustering, preprocessing, and deep learning.

2016 – Today **Research Labs about Gaze Analysis and Interaction**
User interfaces, gaze visualization, and multi-sensor fusion.

2012 – 2015 **Tutorials about Game Development**
Blender content creation and Unreal Engine rendering.

AWARDS

- TPG Accessibility Challenge Judges' Award at the Web For All 2017.
- Honorable mention at the TheWebConference 2017.
- Third place in the first Digital Imagination Challenge by Unitymedia in 2018.

SELECTED SOFTWARE PROJECTS

GazeTheWeb. A gaze-controlled Web browser for people with motor impairment.

Visual Stimuli Discovery. A framework to cluster user experiences on Web sites.

Schau genau! An eye tracking game in an arcade box for a state horticultural show.

Voraca. Versatile tool to visualize volumes from CT and MRT with GPU ray-casting.

raphaelmenges.github.io

SELECTED PUBLICATIONS AND PROPOSALS

Menges, R., Kumar, C., and Staab, S. 2020. Eye tracking for Interaction: Adapting Multimedia Interfaces. In: S. Nikolopoulos, C. Kumar and I. Kompatsiaris, eds., *Signal Processing to Drive Human-Computer Interaction: EEG and eye-controlled interfaces. Institution of Engineering and Technology, 83–116.*

Menges, R., Kumar, C., and Staab, S. 2019. Improving User Experience of Eye Tracking-Based Interaction: Introspecting and Adapting Interfaces. *ACM Trans. Comput.-Hum. Interact. 26, 6, 37:1–37:46.*

Menges, R., Tamimi, H., Kumar, C., Walber, T., Schaefer, C., and Staab, S. 2018. Enhanced Representation of Web Pages for Usability Analysis with Eye Tracking. *Proceedings of ETRA'18, ACM, 18:1–18:9.*

Project Proposal UDeco – Usability Data Ecosystem. July 2020 – Dezember 2022. University of Stuttgart and EYEVIDO GmbH. *Funded by the Federal Ministry of Education and Research of Germany.*