

CERTIFICATE

Mr. Alexey Tukalo, born on 21/07/1994, has worked from 07/07/2015 to 18/11/2015 as an intern at the Institute for Data processing and Electronics (IPE) of the Karlsruhe Institute of Technology (KIT).

His work was focused on the following topic: "Visualization of multimodal 3D Ultrasound Computer Tomography (USCT) volume images".

Mr. Tukalo was very good organized and worked target oriented to achieve the goals of the internship. He managed to first of all get familiar with the existing methods for image fusion of 3D USCT images and then he started to make substantial extensions and improvements by developing a prototype for a novel image fusion method using the HSV color space. He integrated his developments into the USCT DICOM Viewer application. Developing the software, Mr. Tukalo made extensive use of MATLAB and Java. He furthermore developed a web-based rendering of multimodal USCT data in a WebGL ray casting application.

To demonstrate the functionality of the developed software, Mr. Tukalo presented his work in the working group seminar and tested the application with several user tests. The obtained results were evaluated and discussed with the imaging experts during the weekly USCT project meeting. The DICOM viewer application as well as the WebGL volume visualization is currently in use in a clinical study with USCT respectively in a public relations campaign for USCT.

The developed methods pave the way for the analysis of different image fusion methods in a radiological reader study. The contributions of Mr. Tukalo are very useful for the USCT team and the visualization research community.

We thank Mr. Tukalo for the very good work he did in the short time of his internship, demonstrating solid knowledge of medical image processing and software development. He easily learned how to work with new tools and techniques like WebGL. His profound and broaden expertise and his scientific curiosity facilitated the success of his work. It was a pleasure to discuss and work with him. We wish him all the best in his professional development and personal future.

Karlsruher Institut für Technologie (KIT)

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i. A. Michael Markert



i. A. Alina Berger