Xavier Weber

RESEARCH · AI · COMPUTER VISION

Saafke | xavier-weber | xavierweber63

Summary

Driven researcher with experience in implementing, training, and evaluating deep learning models across different computer vision tasks, collaborating with cross-functional teams to develop new tools, and generating high-quality synthetic data.

Work Experience

Queen Mary, University of London — *London, United Kingdom*
RESEARCH ASSISTANT — *Sep. 2020 - Present*

- Wrote python scripts to automatically render realistic 3D scenes in Blender. Re-trained existing deep learning models and showed this novel synthetic data improves accuracy for monocular pose and size estimation in 3D of unseen handheld objects.
- Performed an evaluation study to compare existing state-of-the-art monocular 3D human pose estimation models on challenging video data, e.g. people performing ballet routines or fitness exercises.
- Collaborated with interdisciplinary researchers to develop a new tool for automated visual feedback on videos containing human motion, leveraging 3D human pose estimation and 2D segmentation models.

Google Summer of Code with OpenCV — *Virtual*
STUDENT DEVELOPER — *May 2019 - Aug. 2019*

- Implemented two learning-based Super Resolution (SR) models in TensorFlow and added them to the OpenCV library. These outperform previous SR models in OpenCV in terms of speed and accuracy.
- Collaborated with other software engineer to create an intuitive interface in C++, which allows users to employ powerful SR models in only a few lines of code.

NAVER — *Seongnam-si, South Korea*
DEEP LEARNING INTERN — *June 2018 - Oct. 2018*

- Wrote python scripts to automatically render synthetic PDF paper documents containing random folds and creases.
- Implemented a state-of-the-art U-net model in PyTorch for the task of deformed document rectification.

Education

Queen Mary, University of London — *London, United Kingdom*
MSC IN ARTIFICIAL INTELLIGENCE - DISTINCTION — *Sep. 2019 - Sep. 2020*

- Thesis: Category-level 6D Pose Estimation in a Human-Robot Handover Scenario
- Supervisor: Prof. Andrea Cavallaro

Maastricht University — *Maastricht, The Netherlands*
BSC IN DATA SCIENCE AND KNOWLEDGE ENGINEERING — *Sep. 2015 - July. 2019*

- Thesis: Semantic Structure Extraction on Deformed Documents via Fully Convolutional Networks
- Supervisor: Asst. Prof. Gerasimos Spanakis

Skills

Programming Python, C++, Java, MATLAB, Swift
Technologies PyTorch, TensorFlow, Keras, Git, OpenCV, NumPy, Blender, Docker, Google Cloud
Languages Dutch, English

Certifications

Coursera Deep Learning Specialization
Coursera Computational Neuroscience