TIMO STOFFREGEN

PhD Student, Event-Based Vision Specialist

@ timo.stoffregen@monash.edu +61 490 392-734 Melbourne, Australia
scholar.google.com/citations?user=Ni3RzLsAAAAJhl=

RESEARCH

Event-Based Motion Segmentation by Motion Compensation

Timo Stoffregen, Guillermo Gallego, Tom Drummond, Lindsay Kleeman and Davide Scaramuzza

Nov 2019 ICCV

CED: Color Event Camera Dataset

Cedric Scheerlinck, Henri Rebecq, Timo Stoffregen, Nick Barnes, Robert Mahony, Davide Scaramuzza

Jun 2019 CVPRW

Event Cameras, Contrast Maximization and Reward Functions: an Analysis

Timo Stoffregen and Lindsay Kleeman

Jun 2019 CVPR

Simultaneous Optical Flow and Segmentation (SOFAS)

Timo Stoffregen and Lindsay Kleeman

Dec 2017 ACRA

Equipping Industrial Deep-Sea Manipulators with a Sense of Touch

Peter Kampmann, Timo Stoffregen and Frank Kirchner

Oct 2015 OCEANS MTS/IEEE

WORK AND INTERNSHIPS

Internship

Robotics and Perception Group, ETH Zurich

Jun 2018 - Dec 2018 Switzerland

Last year I spent six months at Davide Scaramuzza's Group at RPG. The output of this work was an ICCV and CVPRW paper as well as another that we are currently working on.

Researcher

Monash University/DSTG Australia

Jun 2016 - Dec 2016 Australia

Here I spent six months working as a paid researcher for DSTG Australia, to produce a white paper on the state-of-the-art in swarm robotics in communications contested environments.

Internship

KUKA Robotics

Mar 2014 - Sep 2014 Germany

During this internship I developed readout boards for engine-knock sensors, to be installed in an automated test-bench for car engines. The main skills used were basic circuit design and Verilog development.

EDUCATION

PhD Computer Vision

Monash University

Apr 2017 - Now Australia

B.Sc Systems Engineering

University of Bremen

Oct 2011 - Mar 2015 Germany

NZQA L3 w/ Excellence

Golden Bay High School

Dec 2010 New Zealand

SKILLS/EXPERTISE

Event-Based Vision
Deep Learning for Computer Vision
Hardware Acceleration

C++ Python PyTorch/Tensorflow
CUDA Verilog SolidWorks
CAD Design

LANGUAGES

English ●●●●●

German ●●●●●

Spanish ●●○○○

PERSONAL HOBBIES

Rock Climbing Hiking
History/Historical Literature
Playing Piano Flying Model Aircraft

Researcher

DFKI (German Research Centre for Artificial Intelligence)

Feb 2012 - Feb 2015 Germany

Working on the LIMES robot parallel to my undergraduate studies, I focused mainly on electronic integration and hardware design.

AWARDS AND SCHOLARSHIPS

Raymond Jarvis Best Paper Award

Best Paper Award

2017 ACRA, Australia

Monash University RTP Stipend

Study Stipend

2017 Australia

NZQA Scholarship Exam

Study Grant

2011 New Zealand

Royal Society Travel Scholarship

ISEC International Science and Engineering Camp

2010 South Korea

Royal Society Travel Scholarship

TUNZA International Children's Conference on the Environment

2004 USA

PROJECTS

Brief outline of some of my larger projects.

WingNet

Hobby Project, Deep Learning

I am currently developing several tools for the School of Biology to automatically annotate/measure *Drosophila Melanogaster* morphology. Although this started just for fun, we plan to publish this work soon.

Deep-Sea Tactile Gripper

Bachelor Degree Project, Electrical Eng

For my bachelor thesis, I designed a tactile gripper for a deep-sea robot arm. The final prototype was successfully published in a top-tier conference.

KUKA Renovation

Bachelor Degree Project, Mechatronics

In this project we stripped down an ancient robot arm and replaced the old analogue control electronics with a more modern PLC system for which we programmed the control logic.

EGG Egg Engraving Machine

Hobby Project, CNC

In this project, I built a machine for engraving a given image onto the surface of an egg.

DIY 3D Printer

Hobby Project, CNC

In this project I developed and built a 3D printer and light mill together with colleagues from DFKI. This included everything from the mechanical design to large parts of the control electronics.

REFEREES

Prof. Lindsay Kleeman
@ Monash University
lindsay.kleeman@monash.edu
18 Alliance Lane
VIC Australia

Prof. Tom Drummond
@ Monash University
tom.drummond@monash.edu
16 Alliance Lane
VIC Australia

Prof. Guillermo Gallego
@ TU Berlin
guillermo.gallego@tu-berlin.de
Marchstrasse 23
10587 Berlin

BRIEFLY ABOUT ME

I am a highly motivated computer vision researcher, with a broader background in electrical engineering. Since I have been interested in tinkering since childhood, I have strong set of practical skills, which is reflected in my approach to my work.

I was raised in Takaka, a beautiful part of rural New Zealand, but left to study Systems Engineering (essentially a mechatronics course) at the University of Bremen, Germany. After taking a year and a half to travel, I moved to Melbourne, Australia, to start a PhD focusing on event-based vision under the auspices of Lindsay Kleeman and Tom Drummond.

Since then, I have been working hard to make use of these novel visual sensors and to boost our understanding of asynchronous data. While my work has mostly focused on optimization methods on the events, I am currently working on developing principled input representations of the events for use in deep neural networks.