GURKIRT SINGH

gurkirt.singh@vision.ee.ethz.ch ⋄ http://gurkirt.github.io/

EDUCATION & EXPERIENCE

ETH Zurich *Feb. 2020 - now*
Postdoctoral Fellow; Supervised by Prof. Luc Van Gool

Oxford Brookes University *Sept. 2015 - Nov 2019*
Ph.D. Student; Supervised by Prof. Fabio Cuzzolin

Borealis AI, Canada *Feb. 2019 - May 2019*
Research Intern; Supervised by Prof. Greg Mori & Prof. Leonid Sigal

Disney Research, USA *Feb. 2017 - Jul. 2017*
R&D Lab Associate (Research Intern); Supervised by Prof. Leonid Sigal & Dr. Andreas Lehrmann

Siemens Corporate Research, India *Oct. 2013 - Aug. 2015*
Research Engineer

INRIA, France *Feb. 2013 - Sept. 2013*
Research Intern & Engineer; Supervised by Prof. Radu Horaud & Dr. Georgios Evangelidis

Institut Polytechnique de Grenoble, France *Sep. 2012 - Jun. 2013*
MSc in Informatics at ENSIMAG; Supervised by Prof. Radu Horaud & Dr. Georgios Evangelidis

University of Edinburgh, UK *Jan. 2010 - May 2010*
Research Intern; Supervised by Prof. Bob Fisher

VIT University, Vellore, India *Aug. 2006 - May 2010*
B.Tech; Supervised by Prf. Bob Fisher & Prof. Arulmozhivarman Pachiyappan

RESEARCH INTERESTS

3D Pose-estimation   Spatiotemporal Action Detection
Video Representation Learning

SELECTED PUBLICATIONS

ROAD: The ROad Event Awareness Dataset for Autonomous Driving
Gurkirt Singh, Stephen Akrigg, Manuele Di Maio, ... others &, Fabio Cuzzolin
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2021

Esad: Endoscopic Surgeon Action Detection Dataset
Vivek Singh Bawa, **Gurkirt Singh**, Francis KapingA, ... others &, Fabio Cuzzolin
Preprint arXiv: 2006.07164, 2021

Spatio-Temporal Action Instance Segmentation and Localisation
Suman Saha, **Gurkirt Singh**, Michael Sapienza, Philip HS Torr, Fabio Cuzzolin
Book Chapter: Modelling Human Motion, 2020

Recurrent Convolutions for Causal 3D CNNs
Gurkirt Singh and Fabio Cuzzolin
Workshop on Large Scale Holistic Video Understanding, ICCV, 2019

An End-to-End Baseline for Video Captioning
Silvio Olivastri, **Gurkirt Singh** and Fabio Cuzzolin
Workshop on Large Scale Holistic Video Understanding, ICCV, 2019

TraMNet - Transition Matrix Network for Efficient Action Tube Proposals
Gurkirt Singh, Suman Saha and Fabio Cuzzolin
Asian Conference on Computer Vision (ACCV), 2018

Incremental Tube Construction for Human Action Detection
Harkirat Behl, Michael Sapienza **Gurkirt Singh**, Suman Saha, Fabio Cuzzolin and Philip Torr
British Machine Vision Conference (BMVC), 2018

Predicting Action Tubes
Gurkirt Singh, Suman Saha and Fabio Cuzzolin
Workshop on Anticipating Human Behavior, ECCV 2018

Online Real-time Multiple Spatiotemporal Action Localisation and Prediction
Gurkirt Singh, Suman Saha, Michael Sapienza, Philip Torr and Fabio Cuzzolin
International Conference on Computer Vision (ICCV), 2017

AMTnet: Action-Micro-Tube Regression by end-to-end Trainable Deep Architecture
Suman Saha, **Gurkirt Singh** and Fabio Cuzzolin
International Conference on Computer Vision (ICCV), 2017

Deep Learning for Detecting Multiple Space-Time Action Tubes in Videos
Suman Saha, **Gurkirt Singh**, Michael Sapienza, Philip Torr and Fabio Cuzzolin
British Machine Vision Conference (BMVC), 2016

Untrimmed Video Classification for Activity Detection: Submission to ActivityNet Challenge
Gurkirt Singh and Fabio Cuzzolin
ActivityNet Challenge Workshop, CVPR 2016

Skeletal Quads: Human action recognition using joint quadruples
Georgios Evangelidis, **Gurkirt Singh**, Radu Horaud
International Conference on Pattern Recognition Vision (ICPR), 2014

Continuous Gesture Recognition from Articulated Poses
Georgios Evangelidis, **Gurkirt Singh**, Radu Horaud
Workshop on Looking at People (Chalearn), ECCV 2014

AWARDS & CHALLENGES

Doctoral Consortium: Selected for Doctoral Consortium Award ICCV-2019   2019

Best Reviewer: Selected as the best reviewer for ICCV-2019   2019

PhD Scholarship: 150th Anniversary PhD Scholarship, Oxford Brookes University   2015

Charades-Challenge 2017: Acton Recognition and Segmentation tasks (Rank: 2/10 and 3/6) 2017

ActivityNet-Challenge 2017: Classification tasks (Rank 3/29)   2017

ActivityNet-Challenge 2016: Classification and Detection tasks (Rank 10/24 and 2/6)   2016

Chalearn-Challenge 2014: Looking at People Challenge (Gesture Detection Task Rank 7/17) 2014

SKILLS

Programming: Python, Matlab, C/C++, Lua

Deep Learning Platforms: PyTorch, Torch, Caffe, TensorFlow

Libraries: Numpy, Scipy, Scikit-Learn, OpenCV, Eigen, Kinect SDK

Operating Systems: Linux, macOS, Windows

TEACHING EXPERIENCE

Machine Learning: Teaching Assistant (Postgraduate)   2018

Computer Vision and Machine Learning: Guest lecturer (Postgraduate)   2016, 2017, 2018

Understanding Programming: Lab Assistant (Undergraduate)   2015, 2016, 2017

COMMUNITY CONTRIBUTIONS

Co-cognised workshop on The ROAD Challenge: Event Detection for Situation Awareness in Autonomous Driving, ICCV 2021. Co-cognised workshop on SARAS endoscopic vision challenge for surgeon action detection, MIDL 2020. Best reviewer award ICCV 2019
Reviewer: TPAMI 2017, 2018, ICCV 2019, 2021, CVPR 2018,2019,2020,2021, BMVC 2019, and IJCIA 2017, 2018, 2019

LANGUAGES

Punjabi (Maternal), Hindi (Fluent), English (Fluent), French (Elementary), German (Elementary)

REFERENCES

Professor Luc Van Gool, ETH Zurich, Switzerland.

Professor Fabio Cuzzolin, Oxford Brookes University, UK.

Professor Leonid Sigal, University of British Columbia, Canada.

Professor Philip Torr, University of Oxford, UK.

Dr. Georgios Evangelidis; Snap, Vienna, Austria.

Dr. Andreas Lehrmann, BorealisAI, Vancouver, Canada.

Professor Bob Fisher, University of Edinburgh, UK.

Dr. Amit Kale, Bosch Research, India.

MORE INFORMATION

Google Scholar: https://scholar.google.com/citations?user=w8XHUMIAAAAJ&hl=en

Homepage: http://gurkirt.github.io/

Github: https://github.com/gurkirt

LinkdIn: https://www.linkedin.com/in/gurkirt/