

# Gurkirt Singh

gurkirt.singh@vision.ee.ethz.ch  $\diamond$  <http://gurkirt.github.io/>

## Experience Academia: 6+ years, Industry 3+ years

<b>CVL, ETH</b> , Zurich, CH	<i>Postdoctoral Fellow</i>	<i>Feb'20 - Present</i>
<b>BorealisAI</b> , Vancouver, CA	<i>Research Intern</i>	<i>Feb'19 - May'19</i>
<b>Disney Research</b> , Pittsburgh, US	<i>Research Intern</i>	<i>Feb'17 - Jul'17</i>
<b>Siemens Research</b> , Bangalore, IN	<i>Research Engineer</i>	<i>Oct'13 - Aug'15</i>
<b>Perception, INRIA</b> , Grenoble, FR	<i>Research Intern</i>	<i>Feb'13 - Sep'13</i>
<b>VGL IIT</b> , Delhi, IN	<i>Research Assistant</i>	<i>May'11 - Apr'12</i>
<b>SMSS lab, IIT</b> , Kanpur, IN	<i>Research Assistant</i>	<i>Jul'10 - Mar'11</i>
<b>University of Edinburgh</b> , , UK	<i>Research Intern</i>	<i>Jan'10 - May'10</i>

## Education

<b>Oxford Brookes University</b> , UK	<i>PhD in Computer Vision</i>	<i>Sep'15 - Nov'19</i>
<b>ENSIMAG, INP</b> , Grenoble, FR	<i>MSc in Informatics</i>	<i>Sep'12 - Jun'13</i>
<b>VIT University</b> , Vellore, IN	<i>B.Tech in Electronics</i>	<i>Aug'06 - May'10</i>

## Mentoring, Teaching, Contributions

Mentored 2 PhD, 8 master, and 3 undergraduate students.

Mentored 3 undergraduate interns at Siemens.

Computer Vision and Machine Learning Lectures for Postgraduates, 2016-2019.

Hands-on session for Understanding Programming course, 2016-2019.

Co-organised workshops and challenges in ROAD dataset at ICCV 2021, and ESAD dataset on surgeon action detection at MIDL 2020.

Regular reviewer for TPAMI, CVPR, ICCV, ECCV, BMVC, IJCIA.

Multiple open source projects with 700+ stars and 150+ forks on GitHub.

## Recent Research Experience

3D-reconstruction, depth estimation, point-cloud registration and semantic segmentation of teeth images for Zaamigo AG.

7+ years in human action recognition, detection and video processing.

Improvised tracking to improve action detection and other projects.

Implemented object detectors for various research projects..

2D/3D human pose estimation for SironaAI.

## Selected Publications 18+ in TPAMI, ICCV, CVPRw, ECCVw, WACV, ACCV, BMVC, ICPR

**G. Singh**, V. Choutas, S. Saha, F. Yu, L.V. Gool, Spatio-Temporal Action Detection Under Large Motion, *WACV*, 2023

**G. Singh**, *et al.*, and F. Cuzzolin, ROAD: The ROad Event Awareness Dataset for Autonomous Driving, *TPAMI*, 2023

**G. Singh**, F. Cuzzolin, Recurrent Convolutions for Causal 3D CNNs, *ICCVW*, 2019

**G. Singh**, S. Saha and F. Cuzzolin, Predicting Action Tubes, *ECCVW*, 2018

**G. Singh**, *et al.*, and P.H.S. Torr, F. Cuzzolin, Online Real-time Multiple Spatiotemporal Action Localisation, *ICCV*, 2017

## Selected Awards & Prizes

Won Multisports-Challenge ECCV'22.

Selected in Doctoral Consortium ICCV-2019.

Best Reviewer award for ICCV-2019.

Second in Charades-Challenge CVPR'17.

Second in ActivityNet-Challenge CVPR'16.

## Hands-on Skills (Years)

Python(6), Matlab(5), C/C++(3), Lua(1).

PyTorch(5), Torch(1), Caffe(2), TensorFlow(1), Keras(1).

Open3D(1), Scikit-Learn(6), OpenCV(10), Eigen(1).

Wandb(2), Tensorboard(4), Visdom(2), Lightning(1).

PySlowFast(2), YOLO(2), Detectron(1), MMCV(1).

iOS APP-Dev(0.5), TorchLite(0.5), TFLite(0.5), ONNX(0.5).

Unit-testing(0.5), Git(7), SVN(2).

AWS(2), Colab(1), Slurm(4), Sbatch(2), DGX(2).

Trained: CNN, RNN, LSTM, GNN, Transformer based models.

Manged 6+ machines with GPUs for 3 years

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