Gurkirt Singh

Computer Vision Lab, ETH – Zurich, Switzerland
guru094@gmail.com ⋄ http://gurkirt.github.io/ ⋄ +41 - 779 774 271

About Me: 9+ years experience in computer vision across 6 countries. I am proficent in both classical and deep learning methods. I enjoy working on 3D-reconstruction, action recognition & detection, human pose estimation, object detection, semantic segmentation and event detection for autonomous driving.

Experience

Academia: 6+ years, Industry 3+ years

ETH, Zurich, CH *Postdoctoral Fellow*	*Feb 20 - Present*
BorealisAI, Vancouver, CA *Research Intern*	*Feb 19 - May 19*
Disney Research, Pittsburgh, US *Research Intern*	*Feb 17 - Jul 17*
Siemens Research, Banglore, IN *Research Engineer*	*Oct 13 - Aug 15*
INRIA, Grenoble, FR *Research Intern*	*Feb 13 - Sep 13*
IIT, Delhi, IN *Research Assistant*	*May 11 - Apr 12*
IIT, Kanpur, IN *Research Assistant*	*Jul 10 - Mar 11*
University of Edinburgh, UK *Research Intern*	*Jan 10 - May 10*

Education

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

Mentoring, Teaching, Contributions

Mentored 13 students: 2 PhD, 8 master, and 3 undergraduate.

Supervised 3 undergraduate interns at Siemens.

Computer vision and machine learning lectures for postgraduates, 2016-19.

Hands-on session for understanding-programming course, 2016-19.

Co-organised workshops and challenges on ROAD dataset at ICCV 21, and on ESAD dataset on surgeon action detection at MIDL 20.

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

Multple 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.

Video processing: 7+ years in action recognition, detection, and tracking.

2D/3D Human pose-estimation: for SironaAI and student projects.

Selected International Awards

Won Multisports-challenge ECCV 22.

Selected in doctoral consortium ICCV 19.

Best reviewer award for ICCV 19.

Second in Charades-challenge CVPR 17.

Second in ActivityNet-challenge CVPR 16.

Technical Skills

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

DeepLearning: PyTorch, Torch, Caffe, TensorFlow, Keras, Lightning, JAX.

Libraries: Open3D, SkLearn, OpenCV, PySLowFast, YOLOv5, Detectron, MMCV.

Mobile-development: TFLite, TorchLite, ONNX, iOS-APP-Dev.

Other: Unit-testing, Git, SVN.

AWS, Colab, Slurm, Sbatch, DGX.

Managed 6+ GPU-machines for 3 years.

Soft Skills

Problem-solving, Critical-thinking, Collaboration, Leadership, Constructive-feedback, Openness to criticism, Persuasive, Presentation, Public-speaking, Adaptive personality, open to new ideas/ways-of-working.

References

Prof. Luc V. Gool, Prof. Fabio Cuzzolin, Prof Leonid Sigal, Prof. Philip Torr
Dr. Georgios Evangelidis.

Selected Publications

18+ in TPAMI, ICCV, CVPRW, ECCVW, WACV, ACCV, BMVC, ICPR

G. Singh, V. Choutas, S. Saha, F. Yu, L.V. Gool, Spatiotemporal action detection under large motion, *WACV*, 23

G. Singh, *et al.*, and F. Cuzzolin, ROAD: the road event awareness dataset for autonomous driving, *TPAMI*, 22

G. Singh, F. Cuzzolin, Recurrent convolutions for causal 3D CNNs, *ICCVW*, 19

G. Singh, S. Saha and F. Cuzzolin, Predicting action tubes, *ECCVW*, 18

G. Singh, *et al.*, and PHS Torr, F. Cuzzolin, Online realtime multiple spatiotemporal action localisation, *ICCV*, 17

G. Evangelidis, **G. Singh**, R. Horaud, Skeletal quads: human action recognition using joint quadruples, *ICPR*, 14