Di YANG

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carpillon https://walker1126.github.io
PhD Candidate (Computer Vision)

EDUCATION

Inria - Sophia Antipolis, STARS Team Sophia Antipolis, France
PhD candidate, Computer Vision and Machine Learning Nov 2020 - Nov 2023
Supervised by Dr. François Brémond (Inria) and Dr. Gianpiero Francesca (Toyota)
Thesis: Human Action Representation Learning in Real-world Videos

University of Lyon - Télécom Saint-Etienne Saint-Etienne, France
M.Eng. & M.Sc., Computer Vision and Data Science Sep 2016 - Sep 2019

Xidian University Xi'an, China
B.Eng., Telecommunication Engineering Aug 2013 - Jul 2017

PROFESSIONAL EXPERIENCE

Toyota Motor Europe - AI Robotics Lab. Brussels, Belgium
Academic-Industrial Collaboration, Research Intern Nov 2019 - Present
Research in human pose estimation and activity recognition

- *Implement and improve SoTA approaches for Toyota's human pose estimation system.*
- *Propose novel deep learning algorithms for Toyota Smart Home action recognition system.*
- *Apply the proposed approaches for Toyota Smart Factory activity analysis system.*

Woven by Toyota - Woven City Tokyo, Japan (Remote)
Academic-Industrial Collaboration Feb 2022 - Present
Research in video representation learning

- *Construct a unified framework for daily living action classification, action detection, self-supervised action representation learning, video generation tasks.*

EKINNOX Sophia Antipolis, France
Research & Development Intern Mar 2019 - Aug 2019
Medical software development using deep learning algorithms

- *Create a spatio-temporal walking model of a healthy person to be robust to occlusions in order to improve human pose estimation based on RGB-D camera.*

University of Lyon (Lab. - UMR CNRS 5516) Lyon, France
Research Intern Jun 2018 - Aug 2018
Images analysis for disease detection in the agricultural field

- *Detect the zones contaminated by mildew for the leaves using hyper-spectral images.*

PUBLICATIONS

[1] Di Yang, Yaohui Wang, Antitza Dantcheva, Quan Kong, Lorenzo Garattoni, Gianpiero Francesca, Francois Bremond. LAC - Latent Action Composition for Skeleton-based Action Segmentation. *In Proc.* ***ICCV*** *2023.*

[2] Di Yang, Yaohui Wang, Antitza Dantcheva, Lorenzo Garattoni, Gianpiero Francesca, Francois Bremond. ViA: View-invariant Skeleton Action Representation Learning via Self-supervised Motion Retargeting. *Submitted to* ***IJCV*** *2023 (Under revision).*

[3] Di Yang, Yaohui Wang, Quan Kong, Antitza Dantcheva, Lorenzo Garattoni, Gianpiero Francesca, Francois Bremond. Self-supervised Spatio-temporal Representation Learning via Latent Time Navigation. *In Proc.* ***AAAI*** *2023.*

[4] Yaohui Wang, **Di Yang**, Francois Bremond, Antitza Dantcheva. Latent Image Animator: Learning to Animate Image via Latent Space Navigation. *In Proc.* ***ICLR*** *2022.*

[5] Di Yang*, Yaohui Wang*, Antitza Dantcheva, Lorenzo Garattoni, Gianpiero Francesca, Francois Bremond. UNIK: A Unified Framework for Real-world Skeleton-based Action Recognition. *In Proc. **BMVC** 2021 (**Oral**, acceptance rate **3%**).*

[6] Srijan Das, Rui Dai, **Di Yang**, Francois Bremond. VPN++: Rethinking Video-Pose embeddings for understanding Activities of Daily Living. *In Proc. **IEEE TPAMI** 2021.*

[7] Di Yang, Rui Dai, Yaohui Wang, Rupayan Mallick, Luca Minciullo, Gianpiero Francesca, Francois Bremond. Selective Spatio-Temporal Aggregation Based Pose Refinement System: Towards Understanding Human Activities in Real-World Videos. *In Proc. **WACV** 2021.*

[8] Di Yang, Yaohui Wang, Antitza Dantcheva, Lorenzo Garattoni, Gianpiero Francesca, Francois Bremond. Self-supervised Video Pose Representation Learning for Occlusion-robust Action Recognition. *In Proc. **FG** 2021 (**Oral**, accceptance rate **10%**).*

[9] Valeriya Strizhkova, Yaohui Wang, David Anghelone, **Di Yang**, Antitza Dantcheva, Francois Bremond. Emotion Editing in Head Reenactment Videos using Latent Space Manipulation. *In Proc. **FG** 2021.*

PATENTS

[1] Method and System for Training An Encoder Model. *EP Patent (in application 2023). Application number: EP23305147.*

[2] Motion Representation Calculation Method and System, Training Method, Computer Program, Readable Medium and System. *EP Patent (in application 2022). Application number: EP22305979.*

[3] Computer-implemented Method for Pre-training A Model to Recognize A Graph-represented Pattern in An Input. *EP Patent (in application 2021). Application number: EP2130596.*

ACADEMIC EXPERIENCE

Attend Cambridge Ellis Unit Summer School — Cambridge, UK
Topic: Probabilistic Machine Learning — Jul 2023

Present a poster at TRACE - Toyota Research on Automated Cars in Europe — Leuven, Belgium
Topic: View-invariant video representation learning for human action recognition — Sep 2022

Attend OxML - Oxford Machine Learning Summer School — Oxford, UK
Topic: Machine Learning x HEALTH — Aug 2022

Give a talk at University of Lyon 2 - IMAGINE Team — Lyon, France
Topic: Real-world skeleton-based human action recognition — Jan 2022

Attend Multi-Modal Video Reasoning and Analyzing Competition (ICCV 2021) — Jul 2021
Propose a skeleton-based action recognition approach for UAV-Human (Ranked top 6).

Serve as reviewer
CVPR 2023/2022, AAAI 2024/2023, CVIU 2023/2021, PRL 2021, WACV2022

SKILLS

- **Program Languages:** Python, C/C++, MATLAB, Java, JavaScript
- **Frameworks:** PyTorch, Keras, Scikit-learn, OpenCV, OpenGL, Qt, SpringBoot, React
- **Languages:** English: Fluent, French: Fluent, Chinese: Native