Dr Cedric Scheerlinck

Senior Deep Learning Engineer

Web: https://cedricscheerlinck.com
Google Scholar: https://scholar.google.com.au/citations?user=UU0Ql2wAAAAJ
Email: cedric.scheerlinck1@gmail.com

I have a strong background in computer vision and extensive experience in training deep neural networks for real-world applications. I am passionate about advancing AI and automation to benefit humanity, and I am eager to learn and grow to embrace new challenges.

Experience

2021 - 2024,* Senior Deep Learning Engineer, *Skydio, Remote

- Trained deep neural networks for visual perception, flow, segmentation and obstacle avoidance.
- Managed the entire training pipeline from data generation and augmentation to model evaluation and real-world deployment to drone.
- Led key breakthroughs in researching and developing core night models, culminating in the successful launch of NightSense.
- Sim2Real, teacher-student models, transformers, multitask learning, speed/accuracy optimization, large-scale no-reference evaluation and hard mining.

Education

2017 - 2021,* Ph.D. in Computer Vision, *Australian National University

- Dissertation: "How to See with an Event Camera".
- Trained lightweight, multi-headed recurrent CNNs for video reconstruction and flow for event cameras obtaining SOTA results.
- Optimized model efficiency gaining 3x speedup over previous SOTA on same hardware.

2018 - 2019,* Research Visit, *University of Zurich & ETH, Robotics and Perception Group

2014 - 2016,* Master of Mechanical Engineering, *Melbourne University

- Computational fluid dynamics simulation of blood flow in 3D reconstructions of real human arteries from angiography + optical coherence tomography

2012 - 2014,* Bachelor of Science, *Melbourne University

Projects

***2020,* Event CNN collaboration (machine learning, Python)**
https://github.com/TimoStoff/event_cnn_minimal
2019, Color Event Camera Dataset
http://rpg.ifi.uzh.ch/CED.html
***2018,* DVS Image Reconstruction (open-source C++ project)**
https://github.com/cedric-scheerlinck/dvs_image_reconstruction

Additional Experience

2021 - 2023,* Guest Lecturer, *Australian National University (ANU)
***2021,* Finding X (producer)** https://youtu.be/MGp77CmhhLw
2017,* Associate Fellowship Higher Education Academy (AFHEA), *ANU
2016 - 2018,* Teaching Assistant, *Melbourne University & ANU
2015,* Research Assistant, *Melbourne University

Awards

2018 Swiss Government Excellence Scholarship
2017 PhD Scholarship (AGRTP & Australian Centre for Robotic Vision)
2016 Dean's Honours List (top 5%) Melbourne University School of Engineering
2015 Exchange Scholarship (MGSA, Melbourne University -> ETH Zürich)
2014 Dean's Honours List, Melbourne University Bachelor of Science

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Publications https://cedricscheerlinck.com/publications

1. Z. Wang, Y. Ng, C. Scheerlinck, R. Mahony, “An Asynchronous Linear Filter Architecture for Hybrid Event-Frame Cameras”, IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), September 2023.
2. Z. Wang, Y. Ng, C. Scheerlinck, R. Mahony, “An Asynchronous Kalman Filter for Hybrid Event Cameras”, International Conference on Computer Vision (ICCV), October 2021.
3. C. Scheerlinck, “How to See with an Event Camera”, Ph.D. Thesis, Australian National University, Canberra, Australia, 2021.
4. L. Pan, R. Hartley, C. Scheerlinck, M. Liu, X. Yu, Y. Dai, “High Frame Rate Video Reconstruction based on an Event Camera”, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), November 2020.
5. T. Stoffregen*, C. Scheerlinck*, D. Scaramuzza, T. Drummond, N. Barnes, L. Kleeman, R. Mahony, “Reducing the Sim-to-Real Gap for Event Cameras”, European Conference on Computer Vision (ECCV), 2020.
6. C. Scheerlinck, H. Rebecq, D. Gehrig, N. Barnes, R. Mahony, D. Scaramuzza, “Fast Image Reconstruction with an Event Camera”, Winter Conference on Applications of Computer Vision (WACV), 2020.
7. C. Scheerlinck*, H. Rebecq*, T. Stoffregen, N. Barnes, R. Mahony, D. Scaramuzza, “CED: Color Event Camera Dataset”, Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2019.
8. L. Pan, C. Scheerlinck, X. Yu, R. Hartley, M. Liu, Y. Dai, “Bringing a Blurry Frame Alive at High Frame-Rate with an Event Camera”, Conference on Computer Vision and Pattern Recognition (CVPR), 2019. [**Oral** accept. rate 6%]
9. C. Scheerlinck, N. Barnes, R. Mahony, "Asynchronous Spatial Image Convolutions for Event Cameras", IEEE Robotics and Automation Letters (RAL), 4(2), April 2019, pp. 816-822. [Also presented at IEEE International Conference on Robotics and Automation (ICRA), 2019.]
10. C. Scheerlinck, N. Barnes, R. Mahony, “Continuous-time Intensity Estimation Using Event Cameras”, Asian Conference on Computer Vision (ACCV), Perth, 2018, pp.308-324.
11. C. Scheerlinck, C. Mamon, T. Zahtila, W. Nguyen, E. Poon, V. Thondapu, C. Chin, S. Moore, P. Barlis, & A. Ooi, “Effect of Medical Imaging Modalities on the simulated blood flow through a 3D reconstructed stented coronary artery segment”, 20th Australasian Fluid Mechanics Conference (AFMC), Perth, 2016.

*Equal contribution.