

Diogo Carbonera Luvizon

Computer Vision Researcher

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Birth: 14th April 1989, Piraju (Brazil)

Academic research experience

2015–2019	Ph.D. in Computer Vision and Machine Learning , Paris-Seine University / University of Cergy-Pontoise, France.
April–July/ 2015	Exchange of research , QoSTREAM project, Faculty of Technical Sciences – University of Novi Sad, Serbia.
2013–2015	M.Sc. in Applied Computing , Vehicle speed estimation by License plate detection and tracking, Federal University of Technology (UTFPR), Brazil.
2009–2010	Academic Internship , Prototyping and Tooling Group (NUFER), Federal University of Technology, Brazil.

Professional experience

2019–present	AI Researcher at Samsung. Technical leader in the fields of 3D Computer Vision and Deep Learning.
2017–2018	Substitute professor (<i>vacataire</i>, 150 hours) . Teaching for the 2nd and 3rd years of B.Sc. in Electronic Engineering as well as for Master's courses, including <i>Artificial intelligence for control (reinforcement learning)</i> , <i>Artificial intelligence (intro. to deep learning)</i> , <i>Parallel programming</i> , and <i>Software engineering</i> .
2011–2014	Development Engineer at Ensitec Tecnologia . Working on development engineering for a broad range of electronic products and systems, from ultra-low power projects to applications using image processing and computer vision algorithms.
2010–2011	Trainee Engineer at Velsis . Development of electronic equipment for vehicle speed measurement systems.

Education

2015–2019	Ph.D. in Computer Vision and Machine Learning , Paris-Seine University, France: “ <i>Machine Learning for Human Action Recognition and Pose Estimation based on 3D Information</i> ”.
2013–2015	M.Sc. in Applied Computing , Federal University of Technology (UTFPR), Brazil.
2007–2011	Electronics Engineering , emphasis in Electronics and Telecommunications, Federal University of Technology (UTFPR), Brazil.

Languages

Portuguese	Native proficiency
English	Professional working proficiency
French	Professional working proficiency (3.5 years living in France)

Professional services

Program committee

2021	Technical program committee of CVPR
2021	Technical program committee of the IEEE Winter Conf. on Applications of Computer Vision (WACV)
2020	Technical program committee of the Asian Conference on Computer Vision (ACCV)
2020	Technical program committee of CVPR

Reviewer activities

2020	International Journal of Computer Vision (IJCV) Elsevier Pattern Recognition (PR)
2018–2020	IEEE Trans. on Multimedia IEEE Signal Processing Letters ACM Journal of Machine Learning Research

Awards and prizes

2018	Best presentation award in the annual ETIS Lab workshop, 2018, France.
2016	1st prize on Workshop of Thesis and Dissertations (WTD - Master), Conference on Graphics, Patterns and Images (SIBGRAPI), 2016, Brazil
2016	2nd prize on Concurso Latino-Americano de Dissertações de Mestrado (CLTM), Conferência Latino-Americana de Informática (CLEI), 2016, Chile.
2015	Financial grant from the Brazilian Government (CNPq) for my PhD studies in France (2015-2019).

Teaching experience

Machine Learning	Artificial Neural Networks, Reinforcement Learning
Computer Science	Parallel Programming (Multi Threads)

Open source software *

deephar	Multitask human pose estimation and action recognition using deep learning (Python/TensorFlow)
pose-regression	2D human pose estimation framework (Python/TensorFlow)
harskel	Human action recognition from skeletal data (Matlab)
vehicle-dsm	Vehicle detection and speed measurement system from a single camera (C/C++)

* All my public source code are available at <https://github.com/dluvizon>

Publications

Link to my Scholar: <https://scholar.google.fr/citations?user=VZ1Q5v4AAAAJ&hl=fr&oi=ao>

International journals

- [1] Diogo C Luvizon, Hedi Tabia, and David Picard. Multi-task deep learning for real-time 3d human pose estimation and action recognition. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2020.
- [2] Diogo C. Luvizon, Hedi Tabia, and David Picard. Human pose regression by combining indirect part detection and contextual information. *Computers & Graphics*, 85:15 – 22, 2019.
- [3] Diogo Carbonera Luvizon, Hedi Tabia, and David Picard. Learning features combination for human action recognition from skeleton sequences. *Pattern Recognition Letters*, 99:13 – 20, 2017.
- [4] Diogo C. Luvizon, Bogdan T. Nassu, and Rodrigo Minetto. A Video-Based System for Vehicle Speed Measurement in Urban Roadways. *IEEE Transactions on Intelligent Transportation Systems (ITS)*, PP(99):1–12, 2016.
- [5] Neri Volpato, Alexandre Franzoni, Diogo C. Luvizon, and Julian M. Schramm. Identifying the Directions of a set of 2D Contours for Additive Manufacturing Process Planning. *The International Journal of Advanced Manufacturing Technology*, 68(1-4):33–43, 2013.

International conferences

- [1] Diogo C. Luvizon, Gustavo Sutter, Andreza A. dos Santos, Jhonatas S. Conceição, Jose L. Flores-Campana, Luis G. L. Decker, Marcos R. Souza, Helio Pedrini, Antonio Joia, and Otávio A. B. Penatti. Adaptive multiplane image generation from a single internet picture. In *the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2021.
- [2] A. Pinto, M. A. Córdova, L. G. L. Decker, J. L. Flores-Campana, M. R. Souza, A. A. dos Santos, J. S. Conceição, H. F. Gagliardi, D. C. Luvizon, R. d. S. Torres, and H. Pedrini. Parallax motion effect generation through instance segmentation and depth estimation. In *2020 IEEE International Conference on Image Processing (ICIP)*, pages 1621–1625, 2020.
- [3] Diogo C. Luvizon, David Picard, and Hedi Tabia. 2D/3D Pose Estimation and Action Recognition Using Multitask Deep Learning. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2018.
- [4] D. C. Luvizon, B. T. Nassu, and R. Minetto. Vehicle speed estimation by license plate detection and tracking. In *XXIX SIBGRAPI - Conference on Graphics, Patterns and Images*, 2016. **1st prize** on the Workshop of Theses and Dissertations.

- [5] D. C. Luvizon, B. T. Nassu, and R. Minetto. Medição da velocidade de veículos por detecção e rastreamento da placa. In *XLII Conferencia Latinoamericana de Informática (CLEI)*, 2016. **2o lugar** no XXII Concurso Latinoamericano de Tesis de Maestría.
- [6] Diogo C. Luvizon, Bogdan T. Nassu, and Rodrigo Minetto. Vehicle Speed Estimation by License Plate Detection and Tracking. In *Acoustics, Speech and Signal Processing (ICASSP), 2014 IEEE International Conference on*, pages 6563–6567, May 2014.

National conferences

- [1] Diogo C. Luvizon, Hedi Tabia, and David Picard. Multimodal Deep Neural Networks for Pose Estimation and Action Recognition. In *Congrès Reconnaissance des Formes, Image, Apprentissage et Perception (RFIAP 2018)*, Marne-la-Vallée, France, June 2018.

Patents

- [1] D. C. Luvizon, R. Minetto, and B. T Nassu. Sistema para Medição de Velocidade Instantânea e Média de Veículos por Reconhecimento de Padrões em Imagens e Vídeos Digitais. INPI - Instituto Nacional da Propriedade Industrial, Registro No. BR10201503191, 2015 (Brazil, in portuguese).

PhD thesis

- [1] Diogo Carbonera Luvizon. *Machine Learning for Human Action Recognition and Pose Estimation based on 3D Information*. Theses, Cergy Paris Université, April 2019.

Master’s thesis

- [1] Diogo Carbonera Luvizon. Vehicle Speed Estimation by License Plate Detection and Tracking. Master’s thesis, Federal University of Technology – Parana, Brazil, July 2015.