David Picard
Researcher

LIGM - IMAGINE group
École Nationale des Ponts et Chaussées
77455 Champs-sur-Marne

Tel: +33 6 79 64 11 96
Email: david.picard@enpc.fr
Webpage: http://davidpicard.github.io

Personal

- Birth: 1982 in Leipzig (Germany)
- Citizenship: French
- Languages: Fluent in English, German and French

Research Interests

- Machine Learning and Deep Learning for Computer Vision, Image and Video Processing

Research Experience

- Sep. 2019 -: **Senior Research Scientist** within Imagine group (A3SI team) at LIGM - UMR 8049, École Nationale des Ponts et Chaussées, CNRS, Univ Gustave Eiffel, Champs-sur-Marne, France.
- Sep. 2017 - Sep. 2018 : **Délégation CNRS** at LIP6, Sorbonne Université
- Sep. 2010 - Aug. 2019: **Maître de conférences** (Associate professor) at ENSEA Engineering Graduate School (École Nationale Supérieure de L'Électronique et de ses Applications), Cergy, France.
- Jan. 2009 - Sep. 2010 : **Post-doctoral** researcher at LIP6, Université Pierre et Marie Curie, Paris, France.
- Sep. 2005 - Dec. 2008 : **Ph.D. in Signal and Image Processing**, Université de Cergy-Pontoise, France.

Education

- 2017, **HDR in Signal and Image Processing**, Université de Cergy-Pontoise (France): *"Contributions à l'apprentissage de représentations pour l'indexation basée sur le contenu visuel"* (*Representation Learning for Visual Content Indexing*)
- 2008, **Ph.D. in Signal and Image Processing**, Université de Cergy-Pontoise (France): *"Recherche d'images sur un réseau à l'aide d'un système multi-agents"* (*"Distributed Image Retrieval using Multi-Agent Systems"*), Advisors: Prof. Arnaud Revel and Prof. Matthieu Cord.
- 2005, **Diplôme d'ingénieur en Électronique, option Informatique et Systèmes** (MSE in Electrical Engineering), ENSEA Engineering Graduate School (FRANCE).
- 2005, **M.Sc. in Signal and Image Processing**, Université de Cergy-Pontoise (France).

Professional Services

National Service

- Member of the CoNRS section 7 2023-2025.

Local Service

- **Deputy managing director** of IMAGINE group at École Nationale des Ponts et Chaussées.
- Head of Computer Science Department of the ENSEA Engineering Graduate School (Feb. 2015 - Sep. 2017).
- Member of Scientific Council of the ENSEA Engineering Graduate School (Oct. 2011 - Dec. 2015).
- Member of Technical Council of the ENSEA Engineering Graduate School (Oct. 2011 - Dec. 2014).
- ICT Advisor at the ENSEA Engineering Graduate School (Sep. 2010 - Sep. 2017).

Conference Organization

- Organizer of CVPR@Paris'2025 micro conference with M. Cord and V. Kalogeiton, June 2025.
- Organizer of ICIP 2018 special session on "Image processing for cultural heritage", Oct. 2018,
- Co-organizer of IPTA 2015 Special session on "Image processing for cultural heritage", Nov. 2015, Orléans, France.
- Organizer of GRETSI 2015 Special session on "Signal and image processing for cultural heritage", Sept. 2015, Lyon, France.
- Co-organizer of GeoDiff Workshop, Feb. 2013, Barcelona, Spain.
- Organizer of ESANN 2013 Special session on Machine Learning and Multimedia, Apr. 2013, Brugge, Belgium.

Program Committee

- Outstanding reviewer ECCV 2020, NeurIPS 2021, CVPR 2021, CVPR 2023.
- Technical Program Committee of CVPR 2016-2025.
- Technical Program Committee of ICCV 2019-2023, AAAI 2020, ECCV 2020, ICML 2021, NeurIPS 2020-2023.
- Technical Program Committee of ESANN 2014 - 2018, Brugge, Belgium.
- Technical Program Committee of 3DOR 2014, 2015.

Reviewer activities

- Reviewer for IEEE Trans. on Pattern Analysis and Machine Intelligence, IEEE Trans. on Multimedia, IEEE Trans. on Robotics, IEEE Signal Processing Letters, Journal of Machine Learning Research, Neurocomputing, Computer Vision and Image Understanding, Machine Vision and Applications, Neural Processing Letters, Multimedia Tools and Applications...

Teaching Experience

- Machine Learning: Artificial Neural Networks, Kernel Methods, Support Vectors Machines.
- Image and Video Processing: Basics, 3D, Multimedia Indexing and Retrieval.
- Computer Science: Operating Systems, C/C++ and Java programming languages, Android.

Advising

Ph.D.

- Lucas Degeorge, "Multimodal generative models", 2025-208, with V. Kalogeiton at École Polytechnique.

- Salma Galaaoui, "Human pose estimation and forecasting from LiDAR data", 2025-208, with N. Samet at valeo.
- Arijit Ghosh, "Efficient Image Generative Models", 2025-208.
- Simon Lepage, "Flexible Representation Learning", 2022-2025, with J. Mary at Criteo.
- Nicolas Dufour, "Deep Learning for joint dynamic scene understanding and synthesis", 2021-2024, with V. Kalegeiton at École Polytechnique.
- Valérie Lee-Gouet, "Artificial intelligence for conservation: case study at the French National Archives", 2020-2023, co-advised with J. Longhi at CY Paris University and C. Simon-Chane at ENSEA.

Past:

- Grégoire Petit, "Deep Learning with dynamic data", 2024, co-advised with B. Delezoide and A. Popescu at CEA.
- Yue Zhu, "3D human body pose estimation in work environments", 2024, with Ergonova.
- Natacha Luka, "Cross-Modal Representation learning", 2024, co-advised with R. Negrel.
- Thibaut Issenhuth, "Interactive generative models", 2020-2023, co-advised with J. Mary at Criteo.
- Victor Besnier, "Safety in machine learning models", co-advised with A. Briot and A. Bursuc at Valeo, 2019-2022.
- Marie-Morganne Paumard, "Deep Learning for 3D fragments re-assembly", co-advised with H. Tabia at Univ. Paris Saclay, 2017-2020.
- Pierre Jacob, "Automatic Labelling for Image Collections Exploration", co-advised with A. Histace at ENSEA, 2017 - 2020.
- Diogo Luvizon, "Activity recognition and classification from 3D videos", co-advised with H. Tabia at ENSEA, 2015-2019.
- Jérôme Fellus, "Distributed Image Retrieval in Decentralized Networks", co-advised with P.-H. Gosselin at ENSEA, 2012-2017.
- Romain Negrel, "Optimal Representations for Image Similarity Search in Patrimonial Collections", co-advised with Prof. P.-H. Gosselin at ENSEA, 2011-2014.

Post-doc

- Yi Ren, "Automatic labeling of cultural heritage images", 2015.
- Olivier Kihl, "Low-level Visual Descriptors for Video Categorization", 2012-2014.

Projects

- **Pose estimation and forecasting from LiDAR**, 2025-2028, Valeo, 70k
- SHARP, frugal generative models, 2024-2029, 150k
- **Conditional deep representation learning**, 2022-2025, Criteo, 120k
- **TOSAI**: towards safety in AI, 2021-2024, joint ANR-DFG-JST,250k
- **Interactive generative models**, 2021-2023, Criteo, 120k
- **3D pose estimation in the wild**, 2021-2023, Ergonova, 110k
- Dynamic scene understanding, 2020 - 2024, École des Ponts, 105k
- **Unsupervised cross-modal representation learning**, 2019-2022, DGA, 59k
- **Archepuz'3D** , 2017-2020 , Patrima , 105k
- ALICE , 2017-2020 , i-Site Paris Seine , 105k
- **Activity recognition from 3D videos** , 2015-2018 , CNPQ (Brasil) , 105k
- ASAP , 2015 , Patrima , 60k
- **Fast learning of Multiple Kernel Machines** , 2015 , BQR ENSEA , 1k

- **CBI at Amsterdam Conservation Center** , 2015 , BQR ENSEA ,3k
- **Qwant** , 2014 , Qwant , 10k
- **Terrarush** , 2013-2015 , PIA , 90k
- Culture 3D Cloud , 2012-2015 , PIA , 155k
- Représentations pour la recherche d'images , 2011-2014 , Patrima , 105k
- GeoDiff , 2011-2012 , PEPS CNRS, 15k

Grants

- **PEDR**: Prime d'encadrement doctoral et de recherche (bonus for high quality in doctoral advising and research), 2015-2019.
- **DAAD**: **Learning low level visual descriptors for image and video categorization**, 1 month collaboration with Dr. V. Willert at TU Darmstadt (Germany) in 2014.

Developed Open Source Software

- JKernelMachines: Java Library for easy research in Kernel Machines (∼15k download). `https://mloss.org/software/view/409/`
- VLAT: C/C++ library to compute efficient tensor based image features.

Publications

International Journals

[1] Xi Wang et al. "Analysis of Classifier-Free Guidance Weight Schedulers." In: *Trans. Mach. Learn. Res.* 2024 (2024). URL: https://openreview.net/forum?id=SUMtDJqicd.

[2] Monika Wysoczanska, Tom Monnier, Tomasz Trzcinski, and David Picard. "Toward Unsupervised Visual Reasoning: Do Off-the-Shelf Features Know How to Reason?" In: *IEEE Access* 12 (2024), pp. 76367–76378. DOI: 10.1109/ACCESS.2024.3406261. URL: https://doi.org/10.1109/ACCESS.2024.3406261.

[3] Thibaut Issenhuth, Ugo Tanielian, Jérémie Mary, and David Picard. "EdiBERT: a generative model for image editing." In: *Trans. Mach. Learn. Res.* 2023 (2023). URL: https://openreview.net/forum?id=GRBbtkW3Lp.

[4] Diogo Carbonera Luvizon, Hedi Tabia, and David Picard. "SSP-Net: Scalable sequential pyramid networks for real-Time 3D human pose regression." In: *Pattern Recognit.* 142 (2023), p. 109714. DOI: 10.1016/J.PATCOG.2023.109714. URL: https://doi.org/10.1016/j.patcog.2023.109714.

[5] Diogo C. Luvizon, David Picard, and Hedi Tabia. "Consensus-Based Optimization for 3D Human Pose Estimation in Camera Coordinates." In: *Int. J. Comput. Vis.* 130.3 (2022), pp. 869–882. DOI: 10.1007/S11263-021-01570-9. URL: https://doi.org/10.1007/s11263-021-01570-9.

[6] Diogo C. Luvizon, David Picard, and Hedi Tabia. "Multi-Task Deep Learning for Real-Time 3D Human Pose Estimation and Action Recognition." In: *IEEE Trans. Pattern Anal. Mach. Intell.* 43.8 (2021), pp. 2752–2764. DOI: 10.1109/TPAMI.2020.2976014. URL: https://doi.org/10.1109/TPAMI.2020.2976014.

[7] Pierre Jacob, David Picard, Aymeric Histace, and Edouard Klein. "DIABLO: Dictionary-based attention block for deep metric learning." In: *Pattern Recognit. Lett.* 135 (2020), pp. 99–105. DOI: 10.1016/J.PATREC.2020.03.020. URL: https://doi.org/10.1016/j.patrec.2020.03.020.

[8] Marie-Morgane Paumard, David Picard, and Hedi Tabia. "Deepzzle: Solving Visual Jigsaw Puzzles With Deep Learning and Shortest Path Optimization." In: *IEEE Trans. Image Process.* 29 (2020), pp. 3569–3581. DOI: 10.1109/TIP.2019.2963378. URL: https://doi.org/10.1109/TIP.2019.2963378.

[9] Michaël Blot, David Picard, Nicolas Thome, and Matthieu Cord. "Distributed optimization for deep learning with gossip exchange." In: *Neurocomputing* 330 (2019), pp. 287–296. DOI: 10.1016/J.NEUCOM.2018.11.002. URL: https://doi.org/10.1016/j.neucom.2018.11.002.

[10] Diogo C. Luvizon, Hedi Tabia, and David Picard. "Human pose regression by combining indirect part detection and contextual information." In: *Comput. Graph.* 85 (2019), pp. 15–22. DOI: 10.1016/J.CAG.2019.09.002. URL: https://doi.org/10.1016/j.cag.2019.09.002.

[11] Aladine Chetouani, Robert Erdmann, David Picard, and Filippo Stanco. "Special Section Guest Editorial: Image Processing for Cultural Heritage." In: *J. Electronic Imaging* 26.1 (2017), p. 11001. DOI: 10.1117/1.JEI.26.1.011001. URL: https://doi.org/10.1117/1.JEI.26.1.011001.

[12] Diogo Carbonera Luvizon, Hedi Tabia, and David Picard. "Learning features combination for human action recognition from skeleton sequences." In: *Pattern Recognit. Lett.* 99 (2017), pp. 13–20. DOI: 10.1016/J.PATREC.2017.02.001. URL: https://doi.org/10.1016/j.patrec.2017.02.001.

[13] Olivier Kihl, David Picard, and Philippe Henri Gosselin. "Local polynomial space-time descriptors for action classification." In: *Mach. Vis. Appl.* 27.3 (2016), pp. 351–361. DOI: 10.1007/S00138-014-0652-Z. URL: https://doi.org/10.1007/s00138-014-0652-z.

[14] Jérôme Fellus, David Picard, and Philippe Henri Gosselin. "Asynchronous gossip principal components analysis." In: *Neurocomputing* 169 (2015), pp. 262–271. DOI: 10.1016/J.NEUCOM.2014.11.076. URL: https://doi.org/10.1016/j.neucom.2014.11.076.

[15] Jérôme Fellus, David Picard, and Philippe-Henri Gosselin. "Indexation multimédia par dictionnaires visuels en environnement décentralisé. Une approche par protocoles Gossip." In: *Traitement du Signal* 32.1 (2015), pp. 39–64. DOI: 10.3166/TS.32.39-64. URL: https://doi.org/10.3166/ts.32.39-64.

[16] Olivier Kihl, David Picard, and Philippe Henri Gosselin. "A unified framework for local visual descriptors evaluation." In: *Pattern Recognit.* 48.4 (2015), pp. 1174–1184. DOI: 10.1016/J.PATCOG.2014.11.013. URL: https://doi.org/10.1016/j.patcog.2014.11.013.

[17] David Picard, Philippe Henri Gosselin, and Marie-Claude Gaspard. "Challenges in Content-Based Image Indexing of Cultural Heritage Collections: Support vector machine active learning with applications to text classification." In: *IEEE Signal Process. Mag.* 32.4 (2015), pp. 95–102. DOI: 10.1109/MSP.2015.2409557. URL: https://doi.org/10.1109/MSP.2015.2409557.

[18] Romain Negrel, David Picard, and Philippe Henri Gosselin. "Web-Scale Image Retrieval Using Compact Tensor Aggregation of Visual Descriptors." In: *IEEE Multim.* 20.3 (2013), p. 2433. DOI: 10.1109/MMUL.2013.14. URL: https://doi.org/10.1109/MMUL.2013.14.

[19] David Picard and Philippe Henri Gosselin. "Efficient image signatures and similarities using tensor products of local descriptors." In: *Comput. Vis. Image Underst.* 117.6 (2013), pp. 680–687. DOI: 10.1016/J.CVIU.2013.02.004. URL: https://doi.org/10.1016/j.cviu.2013.02.004.

[20] David Picard, Nicolas Thome, and Matthieu Cord. "JKernelMachines: a simple framework for kernel machine." In: *J. Mach. Learn. Res.* 14.1 (2013), pp. 1417–1421. DOI: 10.5555/2567709.2502625. URL: https://dl.acm.org/doi/10.5555/2567709.2502625.

[21] David Picard, Arnaud Revel, and Matthieu Cord. "An application of swarm intelligence to distributed image retrieval." In: *Inf. Sci.* 192 (2012), pp. 71–81. DOI: 10.1016/J.INS.2010.03.003. URL: https://doi.org/10.1016/j.ins.2010.03.003.

[22] David Picard, Matthieu Cord, and Arnaud Revel. "Image Retrieval Over Networks: Active Learning Using Ant Algorithm." In: *IEEE Trans. Multim.* 10.7 (2008), pp. 1356–1365. DOI: 10.1109/TMM.2008.2004913. URL: https://doi.org/10.1109/TMM.2008.2004913.

International Conferences

[1] Nicolas Dufour, Victor Besnier, Vicky Kalogeiton, and David Picard. "Don't Drop Your Samples! Coherence-Aware Training Benefits Conditional Diffusion." In: *IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2024, Seattle, WA, USA, June 16-22, 2024*. IEEE, 2024, pp. 6264–6273. DOI: 10.1109/CVPR52733.2024.00599. URL: https://doi.org/10.1109/CVPR52733.2024.00599.

[2] Grégoire Petit et al. "An Analysis of Initial Training Strategies for Exemplar-Free Class-Incremental Learning." In: *IEEE/CVF Winter Conference on Applications of Computer Vision, WACV 2024, Waikoloa, HI, USA, January 3-8, 2024*. IEEE, 2024, pp. 1826–1836. DOI: 10.1109/WACV57701.2024.00185. URL: https://doi.org/10.1109/WACV57701.2024.00185.

[3] Nermin Samet, Cédric Rommel, David Picard, and Eduardo Valle. "PAFUSE: Part-Based Diffusion for 3D Whole-Body Pose Estimation." In: *Computer Vision - ECCV 2024 Workshops - Milan, Italy, September 29-October 4, 2024, Proceedings, Part XIII*. Ed. by Alessio Del Bue, Cristian Canton, Jordi Pont-Tuset, and Tatiana Tommasi. Vol. 15635. Lecture Notes in Computer Science. Springer, 2024, pp. 151–169. DOI: 10.1007/978-3-031-91575-8_10. URL: https://doi.org/10.1007/978-3-031-91575-8%5C_10.

[4] Thibaut Issenhuth, Ugo Tanielian, Jérémie Mary, and David Picard. "Unveiling the Latent Space Geometry of Push-Forward Generative Models." In: *International Conference on Machine Learning, ICML 2023, 23-29 July 2023, Honolulu, Hawaii, USA*. Ed. by Andreas Krause, Emma Brunskill, Kyunghyun Cho, Barbara Engelhardt, Sivan Sabato, and Jonathan Scarlett. Vol. 202. Proceedings of Machine Learning Research. PMLR, 2023, pp. 14422–14444. URL: https://proceedings.mlr.press/v202/issenhuth23a.html.

[5] Grégoire Petit, Adrian Popescu, Eden Belouadah, David Picard, and Bertrand Delezoide. "PlaStIL: Plastic and Stable Exemplar-Free Class-Incremental Learning." In: *Conference on Lifelong Learning Agents, 22-25 August 2023, McGill University, Montréal, Québec, Canada*. Ed. by Sarath Chandar, Razvan Pascanu, Hanie Sedghi, and Doina Precup. Vol. 232. Proceedings of Machine Learning Research. PMLR, 2023, pp. 399–414. URL: https://proceedings.mlr.press/v232/petit23a.html.

[6] Grégoire Petit, Adrian Popescu, Hugo Schindler, David Picard, and Bertrand Delezoide. "FeTrIL: Feature Translation for Exemplar-Free Class-Incremental Learning." In: *IEEE/CVF Winter Conference on Applications of Computer Vision, WACV 2023, Waikoloa, HI, USA, January 2-7, 2023*. IEEE, 2023, pp. 3900–3909. DOI: 10.1109/WACV56688.2023.00390. URL: https://doi.org/10.1109/WACV56688.2023.00390.

[7] Yue Zhu, Nermin Samet, and David Picard. "H3WB: Human3.6M 3D WholeBody Dataset and Benchmark." In: *IEEE/CVF International Conference on Computer Vision, ICCV 2023, Paris, France, October 1-6, 2023*. IEEE, 2023, pp. 20109–20120. DOI: 10.1109/ICCV51070.2023.01845. URL: https://doi.org/10.1109/ICCV51070.2023.01845.

[8] Nicolas Dufour, David Picard, and Vicky Kalogeiton. "SCAM! Transferring Humans Between Images with Semantic Cross Attention Modulation." In: *Computer Vision - ECCV 2022 - 17th European Conference, Tel Aviv, Israel, October 23-27, 2022, Proceedings, Part XIV*. Ed. by Shai Avidan, Gabriel J. Brostow, Moustapha Cissé, Giovanni Maria Farinella, and Tal Hassner. Vol. 13674. Lecture Notes in Computer Science. Springer, 2022, pp. 713–729. DOI: 10.1007/978-3-031-19781-9_41. URL: https://doi.org/10.1007/978-3-031-19781-9%5C_41.

[9] Thibaut Issenhuth, Ugo Tanielian, David Picard, and Jérémie Mary. "Latent reweighting, an almost free improvement for GANs." In: *IEEE/CVF Winter Conference on Applications of Computer Vision, WACV 2022, Waikoloa, HI, USA, January 3-8, 2022*. IEEE, 2022, pp. 3574–3583. DOI: 10.1109/WACV51458.2022.00363. URL: https://doi.org/10.1109/WACV51458.2022.00363.

[10] Pierre Jacob, David Picard, and Aymeric Histace. "Improving Deep Metric Learning with Virtual Classes and Examples Mining." In: *2022 IEEE International Conference on Image Processing, ICIP 2022, Bordeaux, France, 16-19 October 2022*. IEEE, 2022, pp. 2696–2700. DOI: 10.1109/ICIP46576.2022.9897618. URL: https://doi.org/10.1109/ICIP46576.2022.9897618.

[11] Yue Zhu and David Picard. "Decanus to Legatus: Synthetic Training for 2D-3D Human Pose Lifting." In: *Computer Vision - ACCV 2022 - 16th Asian Conference on Computer Vision, Macao, China, December 4-8, 2022, Proceedings, Part IV*. Ed. by Lei Wang, Juergen Gall, Tat-Jun Chin, Imari Sato, and Rama Chellappa. Vol. 13844. Lecture Notes in Computer Science. Springer, 2022, pp. 257–274. DOI: 10.1007/978-3-031-26316-3_16. URL: https://doi.org/10.1007/978-3-031-26316-3%5C_16.

[12] Victor Besnier, Andrei Bursuc, David Picard, and Alexandre Briot. "Triggering Failures: Out-Of-Distribution detection by learning from local adversarial attacks in Semantic Segmentation." In: *2021 IEEE/CVF International Conference on Computer Vision, ICCV 2021, Montreal, QC, Canada, October 10-17, 2021*. IEEE, 2021, pp. 15681–15690. DOI: 10.1109/ICCV48922.2021.01541. URL: https://doi.org/10.1109/ICCV48922.2021.01541.

[13] Victor Besnier, David Picard, and Alexandre Briot. "Learning Uncertainty for Safety-Oriented Semantic Segmentation in Autonomous Driving." In: *2021 IEEE International Conference on Image Processing, ICIP 2021, Anchorage, AK, USA, September 19-22, 2021*. IEEE, 2021, pp. 3353–3357. DOI: 10.1109/ICIP42928.2021.9506719. URL: https://doi.org/10.1109/ICIP42928.2021.9506719.

[14] Ryad Kaoua, Xi Shen, Alexandra Durr, Stavros Lazaris, David Picard, and Mathieu Aubry. "Image Collation: Matching Illustrations in Manuscripts." In: *16th International Conference on Document Analysis and Recognition, ICDAR 2021, Lausanne, Switzerland, September 5-10, 2021, Proceedings, Part IV*. Ed. by Josep Lladós, Daniel Lopresti, and Seiichi Uchida. Vol. 12824. Lecture Notes in Computer Science. Springer, 2021, pp. 351–366. DOI: 10.1007/978-3-030-86337-1_24. URL: https://doi.org/10.1007/978-3-030-86337-1%5C_24.

[15] Thomas Luka, Laure Soulier, and David Picard. "Apprentissage non supervisé de représentations de mots à l'aide de réseaux de convolution bilinéaires sur des caractères." In: *COnférence en Recherche d'Informations et Applications - CORIA 2021, French Information Retrieval Conference, Grenoble, France, April 15, 2021*. Ed. by Antoine Doucet and Adrian-Gabriel Chifu. ARIA, 2021. DOI: 10.24348/CORIA.2021.LONG_1. URL: https://doi.org/10.24348/coria.2021.long%5C_1.

[16] Thomas Luka, Laure Soulier, and David Picard. "Unsupervised Word Representations Learning with Bilinear Convolutional Network on Characters." In: *29th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, ESANN 2021, Online event (Bruges, Belgium), October 6-8, 2021*. 2021. DOI: 10.14428/ESANN/2021.ES2021-38. URL: https://doi.org/10.14428/esann/2021.ES2021-38.

[17] Pierre Jacob, David Picard, Aymeric Histace, and Edouard Klein. "Efficient Codebook and Factorization for Second Order Representation Learning." In: *2019 IEEE International Conference on Image Processing, ICIP 2019, Taipei, Taiwan, September 22-25, 2019*. IEEE, 2019, pp. 849–853. DOI: 10.1109/ICIP.2019.8803791. URL: https://doi.org/10.1109/ICIP.2019.8803791.

[18] Pierre Jacob, David Picard, Aymeric Histace, and Edouard Klein. "Metric Learning With HORDE: High-Order Regularizer for Deep Embeddings." In: *2019 IEEE/CVF International Conference on Computer Vision, ICCV 2019, Seoul, Korea (South), October 27 - November 2, 2019*. IEEE, 2019, pp. 6538–6547. DOI: 10.1109/ICCV.2019.00664. URL: https://doi.org/10.1109/ICCV.2019.00664.

[19] Micael Carvalho, Rémi Cadène, David Picard, Laure Soulier, and Matthieu Cord. "Images and Recipes: Retrieval in the Cooking Context." In: *34th IEEE International Conference on Data Engineering Workshops, ICDE Workshops 2018, Paris, France, April 16-20, 2018*. IEEE Computer Society, 2018, pp. 169–174. DOI: 10.1109/ICDEW.2018.00035. URL: https://doi.org/10.1109/ICDEW.2018.00035.

[20] Micael Carvalho, Rémi Cadène, David Picard, Laure Soulier, Nicolas Thome, and Matthieu Cord. "Cross-Modal Retrieval in the Cooking Context: Learning Semantic Text-Image Embeddings." In: *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval, SIGIR 2018, Ann Arbor, MI, USA, July 08-12, 2018*. Ed. by Kevyn Collins-Thompson, Qiaozhu Mei, Brian D. Davison, Yiqun Liu, and Emine Yilmaz. ACM, 2018, pp. 35–44. DOI: 10.1145/3209978.3210036. URL: https://doi.org/10.1145/3209978.3210036.

[21] Pierre Jacob, David Picard, Aymeric Histace, and Edouard Klein. "Leveraging Implicit Spatial Information in Global Features for Image Retrieval." In: *2018 IEEE International Conference on Image Processing, ICIP 2018, Athens, Greece, October 7-10, 2018*. IEEE, 2018, pp. 2002–2006. DOI: 10.1109/ICIP.2018.8451817. URL: https://doi.org/10.1109/ICIP.2018.8451817.

[22] Diogo C. Luvizon, David Picard, and Hedi Tabia. "2D/3D Pose Estimation and Action Recognition Using Multitask Deep Learning." In: *2018 IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2018, Salt Lake City, UT, USA, June 18-22, 2018*. Computer Vision Foundation / IEEE Computer Society, 2018, pp. 5137–5146. DOI: 10.1109/CVPR.2018.00539. URL: http://openaccess.thecvf.com/content%5C_cvpr%5C_2018/html/Luvizon%5C_2D3D%5C_Pose%5C_Estimation%5C_CVPR%5C_2018%5C_paper.html.

[23] Marie-Morgane Paumard, David Picard, and Hedi Tabia. "Image Reassembly Combining Deep Learning and Shortest Path Problem." In: *Computer Vision - ECCV 2018 - 15th European Conference, Munich, Germany, September 8-14, 2018, Proceedings, Part VI*. Ed. by Vittorio Ferrari, Martial Hebert, Cristian Sminchisescu, and Yair Weiss. Vol. 11210. Lecture Notes in Computer Science. Springer, 2018, pp. 155–169. DOI: 10.1007/978-3-030-01231-1_10. URL: https://doi.org/10.1007/978-3-030-01231-1%5C_10.

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