Hervé Le Borgne

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Researcher at CEA LIST
Computer vision - Multimedia retrieval

Education
Institut national polytechnique de Grenoble, France
- PhD, Information Science, 2000 - 2004
- Master of science, Information Science, 1999 - 2000
- Master of Engineering (French « école d'ingénieur »), Electronics, 1997 - 2000

Experience
Research engineer at CEA LIST (Oct. 2006 – present)
- Research activity in computer vision and multimedia information retrieval (publications, patents)
- Technology transfer from academic research to industrial partners
- Project Manager
- Project proposals (EU-H2020, ANR, competitive clusters...)
- CIR proposals (close industry-academic collaboration)
- PhD and master supervision (20 masters – 6 PhD)
- Dissemination, teaching
- Reviewing activities (international journals and conferences)

Research assistant (post-doc) at Dublin City University (Feb. 2004 – Sept. 2006)
- Academic research on Video Retrieval
- Funded on the FP6 European project *aceMedia* (14 partners – 10 M€)
- Participation to the TrecVid challenge on video retrieval evaluation

Research projects

AI4MEDIA (2020 - 2024)
- H2020 funding
- Topic: explainability of generative models

CPS4EU (2019 - 2022)
- H2020 funding
- Topic: semi-supervised learning

MEERQAT (2020 - 2024)
- ANR funding – principal investigator
- Topic: question answering from text, image and structured information

HIASCI (2021 - 2024)
- Carnot funding
- Topic: learning and simulation for non-destructive control

HoDetec (2020 - 2022)
- CEA funding
- Topic: semi-supervised learning and generative models

Ant'Pix (2015 - 2019)
- Industrial contract with Ant'Inno, French SME specialized in Electronic Document Management
- Topic: object recognition

Curated Media (2014 - present)
- FUI funding – Close collaboration with Linkfluence
- Topic: social media intelligence

Datascale (2014 - 2016)
- PIA funding – Collaboration with Linkfluence and Bull/ATOS
- Topic: multimedia mining that benefit from High Performance Computing

USEMP (2013 - 2016)
- EU-FP7 funding – Scientific coordinator
- Topic: multimedia mining to protect on-line privacy

Polinum (2010 - 2012)
- Industrial contract with I2S, French SME specialized in digital vision.
- Topic: image and textual semantics

YOJI (2009 - 2012)
- ANR and DGA funding - Collaboration with Aldebaran Robotics (robot Nao)
- Topic: robotic vision

SemanticVox (2006-2007)
- OSEO funding – Close collaboration with Vecsys Research
- Topic: Multimedia search engine

FAME2 and POPS (2006 - 2009)
- FUI funding – Close collaboration with Bull and XediX
- Topic: large scale multimedia retrieval

Mediatic (2007 - 2009)
- FUI funding – Proposal writing + collaboration with Alcatel
- Topic: interactive TV programs

ReSend (2005 - 2006)
- EU-Ulysses funding – Project coordinator
- Topic: multimedia fusion

aceMedia (2004 - 2006)
- EU-FP6 funding – Task coordinator
- Topic: multimedia mining

Student and researcher advising

- Postdoc: Aymen Shabou (2011-12), Phong Vo (2014-16), Hani Daher (2014-16) Omar Adjali (2018-2019)
- PhD students: Amel Znaidia (2010-13), Nhi tran (2013-17), Youssef Tamaazousti (2015-2018), Yannick Le Cacheux (2017-2020), Antoine Plumerault (2019-pres), Adrian Bojko (2019-pres.), Perla Doubinsky (2020-pres.)
- 20 master students from 2005 to 2021

Representative recent publications

H-index: 19 – (september 2021).
124 publication, including 9 international journals, 48 international conferences and 8 patents.
Full list at: https://sites.google.com/site/hleborgne/publications

- A. Plumerault, H. Le Borgne, C Hudelot, Controlling generative models with continuous factors of variations, *International conference on Learning Representations (ICLR)* 2020
- O. Adjali, R. Besançon, O. Ferret, H. Le Borgne and B. Grau, Multimodal Entity Linking for Tweets, *42nd European Conference on Information Retrieval (ECIR)*: Advances in Information Retrieval, 2020
- Y. Tamaazousti, H. Le Borgne and C. Hudelot , M.E.A Seddik, M. Tamaazousti. Learning More Universal Representations for Transfer-Learning". In : IEEE T. Pattern Analysis and Machine Intelligence 42.9 (2020). (online may 2019), p. 2212-2224
- Y. Le Cacheux, H. Le Borgne and M. Crucianu. Modeling Inter and Intra-Class Relations in the Triplet Loss for Zero-Shot Learning. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, Seoul, Korea, Oct. 27 - Nov. 2, 2019
- J Girard, Y. Tamaazousti, H. Le Borgne, C. Hudelot, Learning Finer-class Networks for Universal Representation, *British Machine Vision Conference (BMVC 2018)*, Newcastle, UK, 3rd - 6th september 2018
- Y. Tamaazousti, H. Le Borgne and C. Hudelot, MuCale-Net : Multicategorical-Levels Networks to Generate More Discriminating Freatures, IEEE Conf. on Computer Vision and Pattern Recognition, Honolulu, USA, 2017
- Y. Tamaazousti, H. Le Borgne, A. Popescu, E. Gadeski, A. Gînsca, and C. Hudelot, Vision-language integration using constrained local semantic features, *Computer Vision and Image Understanding*, vol. 163, pp 41-57, october 2017
- P. Vo, A. Ginsca, H. Le Borgne and A. Popescu, Harnessing Noisy Web Images for Deep Representation, Computer Vision and Image Understanding, 2017
- Y. Tamaazousti, H. Le Borgne and C. Hudelot, Diverse Concept-Level Features for Multi-Object Classification, Proc. ACM International Conference on Multimedia Retrieval, New York, USA, June 2016
- Y. Tamaazousti, H. Le Borgne and A. Popescu, Constrained Local Enhancement of Semantic Features by Content-Based Sparsity, Proc. ACM International Conference on Multimedia Retrieval (ICMR 2016), New York, USA, June 2016
- T. Q. N. Tran, H. Le Borgne, M. Crucianu, Aggregating Image and Text Quantized Correlated Components, IEEE Conference on Computer Vision and Pattern Recognition, pp. 2046-2054 , 27th june - 1st july 2016
- T. Q. N. Tran, H. Le Borgne, M. Crucianu, Cross-modal Classification by Completing Unimodal Representations, ACM Multimedia 2016 Workshop:Vision and Language Integration Meets Multimedia Fusion, Amsterdam, The Netherlands, October 16, 2016
- E. Gadeski, H. Le Borgne, A. Popescu, Fast and robust duplicate image detection on the web, Multimedia Tools and Applications, pp 1-20, 2016
- T. Q. N. Tran, H. Le Borgne, M. Crucianu, Combining Generic and Specific Information for Cross-modal Retrieval, In Proc. ACM International Conference on Multimedia Retrieval, Shanghai, China, June 23-26, 2015.

Teaching

Main lecturer:
- Deep learning (2016-2022), Centrale Paris
- Computer vision (2015-2016), Centrale Paris
- Multimedia indexing (2007-2009), INSTN

Other activities as assistant lecturer before, in electronics, signal processing, numerical analysis…

Reviewing activities

Journals
- Neural Networks (2020-2021)
- Neural Processin Letters (2019)
- Sensors (2016-2017)
- SPIE Journal of Electronic Imaging (2016)
- ACM Computing Survey (2015)
- ACM Transaction on Multimedia (since 2014)
- International Journal of Computer Mathematics (2014)
- Multimedia Tools and Applications (since 2010)
- Computer Vision and Image Understanding (since 2007)
- IEEE Transactions on Circuits and Systems for Video Technology (since 2006)
- Pattern Recognition Letters (since 2005)

Conferences
- Explainable Deep Learning-AI workshop (ICPR 2020)
- Task-CV workshop (ECCV 2020)
- ACM Multimedia (ACM MM 2019, 2021)
- ACM Multimedia Asia 2019
- Multi-Discipline Approach for Learning Concepts (workshop ICCV 2019)
- Asian Conference on Computer Vision (ACCV 2018)
- IEEE Computer Vision and Pattern Recognition (CVPR 2018)
- MMcommons 2016 (workshop ACM Multimedia)
- IEEE Symposium on Computational Intelligence and Data Mining (CIDM 2007)
- ACM Multimedia (ACM MM 2004 and ACM MM 2005).
- International Conference on Image and Video Retrieval (CIVR 2004 and CIVR 2005)
- European Workshop on the Integration of knowledge, semantic and digital media technologies (EWIMT 2004). --> became SAMT.
- IEE International Conference on Visual Information Engineering (VIE 2005)

Projects
- French agency for research (ANR) in 2009, 2011, 2014, 2016 and 2021
- Expert for European Comission H2020-DT-SPACE-25-EO-2020
- Business cluster for digital content (Cap Digital) in 2011

Miscellaneous

- Best paper award at CBMI 2010 and MMM 2015
- Participation to international evaluation campaign (Trecvid, ImageCLEF...) from 2004 up to now
- Publons Sentinel of Science : top 10% of reviewers in computer science in 2016
- Publons : top 1% of reviewers in cross fields in 2018