

François Fleuret

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Born January 10, 1972, in Versailles, France.
Citizenships: Switzerland, France.
Married, two children (born 2008, 2016).

Employment

Since July 2020

Full Professor, department of Computer Science, University of Geneva, Switzerland.

August 2007 – June 2020

Senior researcher, head of the Machine Learning group, Idiap Research Institute, Switzerland.

January 2004 – July 2007

Senior researcher, EPFL, CVLab research group, Switzerland.

October 2001 – December 2003

Researcher, *Chargé de recherche*, INRIA, France.

July 2001 – September 2001

Post-doctoral position, EPFL, LCN research group, Switzerland.

September 2000 – June 2001

Post-doctoral position, University of Chicago, department of Computer Science, USA.

Other academic positions

Since September 2019

Adjunct Professor, School of Engineering, EPFL, Switzerland

March 2011 – August 2019

Adjunct faculty, *Maître d'Enseignement et de Recherche*, School of Engineering, EPFL.

Education

Habilitation degree in Mathematics, University of Paris XIII, 2006. “Generative Models and Algorithmic Efficiency for Prediction.”

PhD in Mathematics, INRIA / University of Paris VI, 2000. “Coarse-to-fine Face Detection” under the supervision of Prof. D. Geman. Special honor *Mention très honorable avec les félicitations du Jury*.

Master’s degree in Probability (*Diplôme d’Études Approfondies*), University of Paris VI, **Master’s degree in Computer Science and Mathematics** (*Magistère de Mathématiques Fondamentales et Appliquées et d’Informatique*), École Normale Supérieure de Paris and University of Paris VI, 1995.

Teaching

2020

11x001: Introduction à la programmation des algorithmes (28h), University of Geneva.

EE-559: Deep Learning (56h, 340+ students), EPFL.

EE-331: Apprentissage et intelligence artificielle (12h, 70+ students), EPFL.

2018, 2019

EE-559: Deep Learning (56h, 200+ students), EPFL.

Introduction to Deep Learning (6h, 30+ students) Certificate of Advanced Studies in Big Data and Machine Learning, department of Informatics, University of Zurich.

2015, 2017, 2019

EE-613: Machine Learning for Engineers in collaboration with S. Calinon and J-M. Odobez (8-20h, 30+ students), EPFL.

2018

Introduction to Deep Learning (12h, 30+ students) African Master of Machine Intelligence, African Institute for Mathematical Sciences (Kigali, Rwanda).

Deep Learning in PyTorch (6h, 30+ students) IFL Summer School on Machine Learning, University of Zurich.

Deep Learning methods and techniques (6h, 30+ students) Certificate of Advanced Studies in Interaction Science and Technology, Human-IST Institute, University of Fribourg.

Deep Learning in PyTorch (6h, 200+ attendees) Applied Machine Learning Days, EPFL.

2013

EE-613: Machine Learning for Engineers in collaboration with R. Collobert and J-M. Odobez (20h, 12 students), EPFL.

2010, 2011

CS-607: Machine Learning in collaboration with Prof. A. Billard (22h per year, 20+ students), EPFL.

2008

CS-607: Machine Learning in collaboration with Prof. A. Billard and Prof. W. Gerstner (12h, 20+ students), EPFL.

2007

CS-445: Foundations of image science in collaboration with J. Pilet (28h, 30+ students), EPFL.

IC-49: Machine Learning (guest lecture, 4h, 30+ students), EPFL.

2005, 2006

Introduction to C++ (bachelor level, 56h per year, 80+ students), EPFL.

2001

CS-250: Computer vision in collaboration with Prof. Y. Amit (15h, 20+ students), University of Chicago.

CS-116: Introduction to C++ (30h, 50+ students), University of Chicago.

1998, 1999, 2000

Undergraduate exercise sessions in statistics (28h per year, 30+ students) and in **computer programming** (56h per year, 30+ students), University of Paris Dauphine.

1993, 1994

Undergraduate Pascal programming class, (50h per year, 20+ students), *Classe Préparatoire*, Lycée Buffon, Paris.

Grants and industrial collaborations

By default, the amounts listed below correspond to funding under my direct management. Figures highlighted with * are overall budgets of multi-partner projects, and those highlighted with † were under my scientific co-management.

- **Principal investigator** of the Swiss National Science Foundation grant “Robust Deep Density Models for High-Energy Particle Physics and Solar Flare Analysis” (650k CHF / 2.6m CHF*), 2020-2024.
- **Principal investigator** of a research project funded by Swisscom on Neural Architecture Search of Multi-task Learning (274k CHF), 2020-2022.
- **Co-investigator** of the Swiss National Science Foundation grant “Meaningful Human Control of Security Systems – Aligning International Humanitarian Law with Human Psychology” (166k CHF / 591k CHF*), 2020-2024.
- **Principal investigator** of the Swiss National Science Foundation grant “Computational Reduction for Training and Inference” (245k CHF), 2020-2022.
- **Principal investigator** of a research project funded by ams International AG on multi-sensor processing (300k CHF), 2020-2022.
- **Principal investigator** of the Swiss Innovation Agency grant “MALAT: Machine Learning for Air Traffic” (262k CHF), 2020-2022.
- **Co-investigator** of the ETH Strategic Focus Area project “MoCont: MOnitoring and CONTRol of AM metal process” (50k CHF), 2018-2021.
- **Principal investigator** of the Swiss National Science Foundation grant “Importance sampling for Large-Scale Unsupervised Learning” (375k CHF), 2017–2020.
- **Principal investigator** of a The Ark grant on Coffee Machine optimization in collaboration with Eversys AG (67k CHF / 94k CHF*), 2019-2020.
- **Co-investigator** of the Swiss Innovation Agency grant “Impulse-Unique Stability Plates: Advanced Aluminium Solution for High Precision Milling” (91k CHF / 272k CHF*), 2019-2020.
- **Principal investigator** of the Hasler Foundation grant “Multi-view Detection with Metric-Learning for Deep Network Fusion” (118k CHF), 2017-2019.
- **Principal investigator** of a grant from the Loterie Romande for a Deep-learning GPU cluster (120k CHF†), 2017.
- **Beneficiary** of a Research gift from the HSA foundation for work on high-performance computing with GPUs (72k CHF), 2017.
- **Principal investigator** of the Hasler Foundation grant “Massive Sets of Heuristics for Machine Learning II” (293k CHF), 2013–2017.
- **Principal investigator** of the Swiss Commission for Technology and Innovation grant “Intelligent Monitoring for In-line Manufacturing” (267k CHF), 2016–2017
- **Principal investigator** of the Swiss National Science Foundation grant “Tracking in the Wild” (331k CHF / 995k CHF*), 2014–2017.
- **Co-investigator** of the Swiss Commission for Technology and Innovation grant “Convenient and Secure 3D Face Recognition based on RGB-D Cameras” (175k CHF / 350k CHF*), 2016–2017
- **Principal investigator** of the Swiss National Science Foundation grant “Object Detection with Active Sample Harvesting” (226k CHF), 2012–2016.
- **Principal investigator** of a The Ark grant on Face Alignment using RGB-D Cameras in collaboration with KeyLemon (130k CHF), 2015.

- **Principal investigator** of the Swiss Commission for Technology and Innovation grant “Real-time Perimeter Board Content Digital Replacement” in collaboration with E.S. Concept S.A. (366k CHF), 2015–2016.
- **Principal investigator** of a The Ark grant on advertisement replacement in video streams in collaboration with E.S. Concept S.A. (87k CHF), 2014.
- **Principal investigator** of a The Ark grant in collaboration with Automation Industrielle S.A. (115k CHF), 2013.
- **Principal investigator** of the Hasler Foundation grant “User-Based Similarity Learning for Interactive Image Retrieval” (39k CHF), 2012–2013.
- **Principal investigator (coordinator)** of the FP7 European project “Massive Sets of Heuristics for Machine Learning” (650k CHF / 2.5m CHF*), 2010–2013.
- **Co-investigator** of the Swiss Commission for Technology and Innovation grant, “Image-Based Object Tracking and Identification in Team Sports Environments” (187k CHF[†]), 2011–2013.
- **Principal investigator** of the Swiss National Science Foundation grant “Very Large Sets of Heuristics for Scene Interpretation” (215k CHF), 2009–2013.
- **Co-investigator** of the Swiss National Science Foundation grant “Understanding Brain Morphogenesis” (150k CHF / 1.2m CHF*), 2009–2012.
- **Co-investigator** of the Swiss National Science Foundation grant “Multimodal Interaction and Multimedia Data Mining” (82k CHF / 1.2m CHF*), 2008–2011.
- **Co-investigator** of the Swiss National Science Foundation grant “Training Embedded Vision Systems” (130k CHF[†]), 2007–2011.
- **Co-investigator** of the Swiss National Science Foundation grant “View Sets for 3-D Object Detection and Recognition” (125k CHF[†]), 2005–2009.

Services

- **Associate Editor**, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), since 2012.
- **Area Chair**, Conference on Neural Information Processing Systems (NeurIPS), 2012, 2014, 2016–2020.
- **Area Chair**, AAAI Conference on Artificial Intelligence (AAAI), 2019.
- **Area Chair**, IEEE International Conference on Computer Vision (ICCV), 2015, 2019.
- **Member** of the Electrical Engineering Doctoral Program Committee, École Polytechnique Fédérale de Lausanne, 2015–2020.
- **Expert** for the International Risk Governance Center workshop on Governing Deepfake Risks (Zurich, 2019), “Deepfake methods and risks.”
- **Expert** for the Belgian Science Policy, 2016, the Swiss National Science Foundation, 2014, the Austrian Science Fund, 2009, 2014, the Netherlands Organization for Scientific Research, 2013, the French National Research Agency, 2007, 2012, and the Research Council of the Academy of Finland, 2009.
- **Site manager** for the PASCAL 2 Network of Excellence, 2008–2013.
- **Co-organizer** of the NIPS Workshop on Efficient Machine Learning, 2007.
- **Member** of the INRIA post-doctoral grant commission, 2002, 2003.

Invitations

- Invited speaker, Summer School “Mathematics of Deep Learning”, Zuse Institute (Berlin, DE), 2019.
- Invited speaker, CUSO Winter School on Deep Learning (Lenk, CH), 2019.
- Invited speaker, Robotics and Perception Group seminar, University of Zurich (Zurich, CH), 2018. “Training models with sample prioritization.”
- Invited speaker, Deep Learning Workshop, Google Office, (Zurich, CH), 2017. “Kronecker Recurrent Units.”
- Invited speaker, Applied Machine Learning Days, EPFL, (Lausanne, CH), 2017. “Semi-supervised learning of Deep Metrics for Stereo Reconstruction.”
- Invited speaker, Geomatics seminar, ETHZ, (Zurich, CH), 2016. “Training models with Sample Prioritization.”
- Invited speaker, Computer Science seminar Royal Holloway, University of London, (Egham, UK), 2016. “Multi-camera, multi-target tracking.”
- Invited speaker, Swiss Photonics workshop, (Neuchâtel, CH), 2016. “Exact Acceleration of Linear Object Detectors.”
- Visiting Associate, Vision Lab, Caltech (Pasadena, USA), Summers 2006, 2007, 2012, 2015.
- Keynote speaker, ECCV Workshop on Visual Object Tracking Challenge (Zurich, Switzerland), 2014. “Multi Person Tracking.”
- Invited speaker, Robotics Research Group Seminar, Oxford (Oxford, UK), 2013. “Object detection with pose-indexed features.”
- Keynote speaker, Workshop of the Austrian Association for Pattern Recognition (Innsbruck, Austria), 2013. “Boosting in large dimension feature spaces”
- Invited speaker, Human Activity and Vision Summer School, INRIA (Sophia-Antipolis, France), 2012. “Multi-person tracking.”
- Invited speaker, Machine Learning Summer School, Purdue University (West Lafayette, USA), 2011. “The MASH project.”
- Invited speaker, Workshop on Validation in Statistics and Machine Learning, WIAS (Berlin, Germany), 2010. “The MASH project.”
- Invited speaker, Vision seminar, University College London (London, UK), 2008. “Cat detection with stationary features.”
- Invited speaker, Workshop in Honor of Donald Geman 65th birthday, Johns Hopkins University (Baltimore, USA), 2008. “Learning and object Detection: From decision trees to stationary features.”

Dissemination

- Panel, Applied Machine Learning Days, EPFL, (Lausanne, CH), 2020. “How to deploy Machine Learning to support Humanitarian Action in war zones?”
- Principal organizer of the “Swiss Machine Learning Day”, EPFL, ~100 attendees (Lausanne, CH), every year since 2012.
- Presentation to high school students, “Journées gymnasien-ne-s”, EPFL (Lausanne, CH), 2019. “Apprentissage et intelligence artificielle.”

- Seminar for high school mathematics teachers, Commission Romande de Mathématique (Champéry, CH), 2019, “Intelligence Artificielle et Apprentissage à Large Échelle.”
- Tutorial, Applied Machine Learning Days, EPFL, (Lausanne, CH), 2018. “Deep-learning in PyTorch” (6h, 150+ attendees).
- Seminar “Mathématiques et Société”, University of Neuchâtel (Neuchâtel, CH), 2018. “Intelligence Artificielle et Apprentissage à large échelle.”
- Invited to the radio show CQFD, Swiss Public Radio, 2017. “Des réseaux neuronaux contre la myopie des télescopes.”
- Presentation to high school students “Semaine technique et informatique”, Lycée Denis-de-Rougemont (Neuchâtel, CH), 2017. “L’intelligence artificielle.”
- Organizer of the “Deep Learning, Tools and Methods” workshop, Idiap, ~250 attendees from academic and private sector over three days (45k CHF budget, Martigny, CH), 2016
- Public debate, Association Cèdres Réflexion, Espace Culturel des Terreaux (Lausanne, CH), 2015. “L’Humain est-il machine ou esprit ?”
- Seminar “Mathématiques et Société”, University of Neuchâtel (Neuchâtel, CH), 2009. “Statistiques, apprentissage et prédiction.”

Phd supervisions

Ongoing

- Vincent Micheli, **PhD supervision** on interpretable deep reinforcement learning (University of Geneva).
- Bálint Máté, **PhD supervision** on deep learning for particle physics and solar astronomy (University of Geneva).
- Atul Kumar, **PhD supervision** on deep learning for particle physics and solar astronomy (University of Geneva).
- Daniele Paliotta, **PhD supervision** on deep learning for particle physics and solar astronomy (University of Geneva).
- Nikolaos Dimitriadis, **PhD supervision** on architecture search for transfer learning (EPFL).
- Arnaud Pannatier, **PhD supervision** on machine learning for air traffic control (IDIAP).
- Sepehr Johari, **PhD supervision** on stereo reconstruction with active sensors (IDIAP).
- Matteo Pagliardini, **PhD co-supervision** on question answering with a knowledge base (EPFL).
- Kyle Matoba, **PhD supervision** on formal guarantees for trustworthy deep neural networks (IDIAP).
- Evann Courdier, **PhD supervision** on computationally efficient deep-learning architectures (IDIAP).
- Prabhu Teja, **PhD supervision** on transfer learning for semantic segmentation (IDIAP).
- Suraj Srinivas, **PhD supervision** on learning deep structures from data (IDIAP).
- Angelos Katharopoulos, **PhD supervision** on importance sampling for large-scale training (IDIAP).

Awarded

- Tatjana Chavdarova, **PhD supervision** on multi-camera detection with deep learning (EPFL/Idiap), 2020.
- Stepan Tulyakov, **PhD supervision** on planet surface 3D reconstruction from stereo images (EPFL), 2020.

- Cijo Jose, **PhD supervision** on transfer learning for small-set appearance recognition (EPFL/Idiap), 2018.
- James Newling, **PhD supervision** on computationally efficient learning in high dimension (EPFL/Idiap), 2018.
- Pierre Baqué, **PhD co-supervision** with Prof. Pascal Fua on Variational Inference for detection (EPFL), 2018.
- Timur Bagautdinov, **PhD co-supervision** with Prof. Pascal Fua on multi-camera tracking (EPFL), 2018.
- Olivier Canévet, **PhD supervision** on active harvesting of training sets (EPFL/Idiap), 2016.
- Leonidas Lefakis, **PhD supervision** on prediction and action selection with very large feature sets (EPFL/Idiap), 2014.
- Horesh Ben Shitrit, **PhD co-supervision** with Prof. Pascal Fua on multi-camera tracking, (EPFL), 2014.
- Charles Dubout, **PhD supervision** on object detection with very large feature sets (EPFL/Idiap), 2013.
- Nicolae Suditu, **PhD supervision** on large-scale interactive image retrieval (EPFL/Idiap), 2013.
- Karim Ali, **PhD co-supervision** with Prof. Pascal Fua on hand detection in industrial environment (EPFL/CSEM), 2012.
- Germán González Serrano, **PhD co-supervision** with Prof. Pascal Fua on filament reconstruction (EPFL), 2011.
- Jérôme Berclaz, **PhD co-supervision** with Prof. Pascal Fua on multi-camera people tracking (EPFL), 2010.
- Ali Shahrokni, **PhD co-supervision** with Prof. Pascal Fua on texture segmentation (EPFL), 2005.

Technology transfer

- **Co-founder** Neural Concept SA, 2018.
- **Consultant** RAM Active Investments, 2018-2020
- **International patent** WO2019048085 “Shape optimisation of technical devices via gradient descent using convolutional neural network proxies.”
- **US patent** US10144594B2 “Method for orienting tube components.”
- **US patent** US9058541B2 “Object detection method, object detector and object detection computer program.”
- **European patent** EP2780871B1 “Tracklet-based Multi-Commodity Network Flow for Tracking Multiple People.”
- **US patent** US9794525B2 “Systems and methods for tracking interacting objects .”

Publications

Book chapters

F. Fleuret, H. Ben Shitrit, and P. Fua. **Re-Identification for Improved People Tracking**. In S. Gong, M. Cristani, Y. Shuicheng, and C. C. Loy, editors, *Person Re-Identification*, pages 311–336. Springer, 2014

Peer-reviewed Journal Articles

S. Tulyakov, A. Ivanov, N. Thomas, V. Roloff, A. Pommerol, G. Cremonese, T. Weigel, and F. Fleuret. **Geometric calibration of Colour and Stereo Surface Imaging System of ESA's Trace Gas Orbiter.** *Advances in Space Research*, 61(1):487–496, 2018

R. Lefort, L. Fusco, O. Pertz, and F. Fleuret. **Machine learning-based tools to model and to remove the off-target effect.** *Pattern Analysis and Applications (PAA)*, 20(1):87–100, 2017

L. Lefakis and F. Fleuret. **Jointly Informative Feature Selection Made Tractable by Gaussian Modeling.** *Journal of Machine Learning Research (JMLR)*, 17(182):1–39, 2016

X. Wang, E. Turetken, F. Fleuret, and P. Fua. **Tracking Interacting Objects Using Intertwined Flows.** *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 38(11):2312–2326, 2016

L. Fusco, R. Lefort, K. Smith, F. Benmansour, G. Gonzalez, C. Barilari, B. Rinn, F. Fleuret, P. Fua, and O. Pertz. **Computer vision profiling of neurite outgrowth dynamics reveals spatio-temporal modularity of Rho GTPase signaling.** *Journal of Cell Biology*, 212(1):91–111, 2016

N. Suditu and F. Fleuret. **Adaptive relevance feedback for large-scale image retrieval.** *Multimedia Tools and Applications (MTA)*, 75(12):6777–6807, 2016

C. Dubout and F. Fleuret. **Adaptive Sampling for Large Scale Boosting.** *Journal of Machine Learning Research (JMLR)*, 15:1431–1453, 2014

H. Ben Shitrit, J. Berclaz, F. Fleuret, and P. Fua. **Multi-Commodity Network Flow for Tracking Multiple People.** *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 36(8):1614–1627, 2013

R. Lefort and F. Fleuret. **TreeKL: A distance between high dimension empirical distributions.** *Pattern Recognition Letters (PRL)*, 34(2):140–145, 2013

K. Ali, F. Fleuret, D. Hasler, and P. Fua. **A Real-Time Deformable Detector.** *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 34(2):225–239, 2012

F. Fleuret, T. Li, C. Dubout, E. K. Wampler, S. Yantis, and D. Geman. **Comparing machines and humans on a visual categorization test.** *Proceedings of the National Academy of Sciences (PNAS)*, 108(43):17621–17625, 2011

J. Berclaz, F. Fleuret, E. Turetken, and P. Fua. **Multiple Object Tracking using K-Shortest Paths Optimization.** *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 33(9):1806–1819, 2011

F. Fleuret. **Multi-Layer Boosting for Pattern Recognition.** *Pattern Recognition Letters (PRL)*, 30:237–241, 2009

A. Shahrokni, F. Fleuret, T. Drummond, and P. Fua. **Classification-based Probabilistic Modeling of Texture Transition for Fast Line Search Tracking and Delineation.** *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 31(3):570–576, 2009

F. Fleuret and D. Geman. **Stationary Features and Cat Detection.** *Journal of Machine Learning*

Research (JMLR), 9:2549–2578, 2008

F. Fleuret, J. Berclaz, R. Lengagne, and P. Fua. **Multi-Camera People Tracking with a Probabilistic Occupancy Map**. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 30(2):267–282, 2008

F. Fleuret. **Fast Binary Feature Selection with Conditional Mutual Information**. *Journal of Machine Learning Research (JMLR)*, 5:1531–1555, 2004

F. Fleuret and D. Geman. **Coarse-to-fine Face Detection**. *International Journal of Computer Vision (IJCV)*, 41(1/2):85–107, 2001

F. Fleuret and E. Brunet. **DEA : An Architecture for Goal Planning and Classification**. *Neural Computation*, 12:1987–2008, 2000

Peer-reviewed Conference Proceedings

S. Srinivas and F. Fleuret. **Rethinking the Role of Gradient-based Attribution Methods for Model Interpretability**. In *Proceedings of the International Conference on Learning Representations (ICLR)*, 2021. (to appear)

T. Chavdarova, M. Pagliardini, S. Stich, F. Fleuret, and M. Jaggi. **Taming GANs with Lookahead-Minmax**. In *Proceedings of the International Conference on Learning Representations (ICLR)*, 2021. (to appear)

A. Vyas, A. Katharopoulos, and F. Fleuret. **Fast Transformers with Clustered Attention**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, 2020. (to appear)

V. Micheli, M. d'Hoffschmidt, and F. Fleuret. **On the importance of pre-training data volume for compact language models**. In *Proceedings of the international Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pages 7853–7858, 2020

T. Prabhu, F. Mai, T. Vogels, M. Jaggi, and F. Fleuret. **Optimizer Benchmarking Needs to Account for Hyperparameter Tuning**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 8837–8846, 2020

A. Katharopoulos, A. Vyas, N. Pappas, and F. Fleuret. **Transformers are RNNs: Fast Autoregressive Transformers with Linear Attention**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 5294–5303, 2020

E. Courdier and F. Fleuret. **Real-Time Segmentation Networks should be Latency Aware**. In *Proceedings of the Asian Conference on Computer Vision (ACCV)*, 2020. (to appear)

S. Srinivas and F. Fleuret. **Full-Gradient Representation for Neural Network Visualization**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, pages 4126–4135, 2019

T. Chavdarova, G. Gidel, F. Fleuret, and S. Lacoste-Julien. **Reducing Noise in GAN Training with Variance Reduced Extragradient**. In *Proceedings of the international conference on Neural Information*

Processing Systems (NeurIPS), pages 391–401, 2019

S. Tulyakov, F. Fleuret, M. Kiefel, P. Gehler, and M. Hirsch. **Learning an event sequence embedding for event-based deep stereo**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 1527–1537, 2019

A. Katharopoulos and F. Fleuret. **Processing Megapixel Images with Deep Attention-Sampling Models**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 3282–3291, 2019

S. Tulyakov, A. Ivanov, and F. Fleuret. **Practical Deep Stereo (PDS): Toward applications-friendly deep stereo matching**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, pages 5874–5884, 2018

C. Jose, M. Cissé, and F. Fleuret. **Kronecker Recurrent Units**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 2380–2389, 2018

S. Srinivas and F. Fleuret. **Knowledge Transfer with Jacobian Matching**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 4723–4731, 2018

A. Katharopoulos and F. Fleuret. **Not All Samples Are Created Equal: Deep Learning with Importance Sampling**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 2525–2534, 2018

P. Baqué, E. Remelli, F. Fleuret, and P. Fua. **Geodesic Convolutional Shape Optimization**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 472–481, 2018

T. Chavdarova and F. Fleuret. **SGAN: An Alternative Training of Generative Adversarial Networks**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 9407–9415, 2018

T. Chavdarova, P. Baqué, S. Bouquet, A. Maksai, C. Jose, T. Bagautdinov, L. Lettry, P. Fua, L. Van Gool, and F. Fleuret. **WILDTRACK: A Multi-camera HD Dataset for Dense Unscripted Pedestrian Detection**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 5030–5039, 2018

J. Newling and F. Fleuret. **K-Medoids For K-Means Seeding**. In *Proceedings of the international conference on Neural Information Processing Systems (NIPS)*, pages 5195–5203, 2017

S. Tulyakov, A. Ivanov, and F. Fleuret. **Weakly Supervised Learning of Deep Metrics for Stereo Reconstruction**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 1348–1357, 2017

P. Baqué, F. Fleuret, and P. Fua. **Deep Occlusion Reasoning for Multi-Camera Multi-Target Detection**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 271–279, 2017

A. Maksai, X. Wang, F. Fleuret, and P. Fua. **Non-Markovian Globally Consistent Multi-Object Tracking**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 2563–2573, 2017

S. Abbasi-Sureshjani, B. Dasht Bozorg, B. M. ter Haar Romeny, and F. Fleuret. **Boosted Exudate**

Segmentation in Retinal Images using Residual Nets. In *Proceedings of the MICCAI Workshop on Ophthalmic Medical Image Analysis (OMIA)*, pages 210–218, 2017

T. Chavdarova and F. Fleuret. **Deep Multi-Camera People Detection.** In *Proceedings of the IEEE International Conference on Machine Learning and Applications (ICMLA)*, pages 848–853, 2017

J. Newling and F. Fleuret. **A Sub-Quadratic Exact Medoid Algorithm.** In *Proceedings of the international conference on Artificial Intelligence and Statistics (AISTATS)*, pages 185–193, 2017. (Best paper award)

P. Baqué, F. Fleuret, and P. Fua. **Multi-Modal Mean-Fields via Cardinality-Based Clamping.** In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 271–279, 2017

S. Abbasi-Sureshjani, B. Dasht Bozorg, B. M. ter Haar Romeny, and F. Fleuret. **Exploratory Study on Direct Prediction of Diabetes using Deep Residual Networks.** In *Proceedings of the thematic conference on computational vision and medical image processing (VipIMAGE)*, pages 797–802, 2017

T. Bagautdinov, A. Alahi, F. Fleuret, P. Fua, and S. Savarese. **Social Scene Understanding: End-to-End Multi-Person Action Localization and Collective Activity Recognition.** In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 3425–3434, 2017

J. Newling and F. Fleuret. **Fast mini-batch k-means by nesting.** In *Proceedings of the international conference on Neural Information Processing Systems (NIPS)*, pages 1352–1360, 2016

C. Jose and F. Fleuret. **Scalable Metric Learning via Weighted Approximate Rank Component Analysis.** In *Proceedings of the European Conference on Computer Vision (ECCV)*, pages 875–890, 2016

O. Canévet, C. Jose, and F. Fleuret. **Importance Sampling Tree for Large-scale Empirical Expectation.** In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 1454–1462, 2016

J. Newling and F. Fleuret. **Fast k-means with accurate bounds.** In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 936–944, 2016

O. Canévet and F. Fleuret. **Large Scale Hard Sample Mining with Monte Carlo Tree Search.** In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 5128–5137, 2016

P. Baqué, T. Bagautdinov, F. Fleuret, and P. Fua. **Principled Parallel Mean-Field Inference for Discrete Random Fields.** In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 5848–5857, 2016

E. Khan, P. Baqué, F. Fleuret, and P. Fua. **Kullback-Leibler Proximal Variational Inference.** In *Proceedings of the international conference on Neural Information Processing Systems (NIPS)*, pages 3402–3410, 2015

T. Bagautdinov, F. Fleuret, and P. Fua. **Probability Occupancy Maps for Occluded Depth Images.** In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*,

pages 2829–2837, 2015

O. Canévet and F. Fleuret. **Efficient Sample Mining for Object Detection**. In *Proceedings of the Asian Conference on Machine Learning (ACML)*, pages 48–63, 2014

O. Canévet, L. Lefakis, and F. Fleuret. **Sample Distillation for Object Detection and Image Classification**. In *Proceedings of the Asian Conference on Machine Learning (ACML)*, pages 64–79, 2014

A. Penate Sanchez, F. Moreno-Noguer, J. Andrade Cetto, and F. Fleuret. **LETHA: Learning from High Quality Inputs for 3D Pose Estimation in Low Quality Images**. In *Proceedings of the International Conference on 3D vision (3DV)*, volume 1, pages 517–524, 2014

X. Wang, E. Turetken, F. Fleuret, and P. Fua. **Tracking Interacting Objects Optimally Using Integer Programming**. In *Proceedings of the European Conference on Computer Vision (ECCV)*, pages 17–32, 2014

L. Lefakis and F. Fleuret. **Dynamic Programming Boosting for Discriminative Macro-Action Discovery**. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 1548–1556, 2014

L. Lefakis and F. Fleuret. **Jointly Informative Feature Selection**. In *Proceedings of the international conference on Artificial Intelligence and Statistics (AISTATS)*, pages 567–575, 2014

L. Lefakis and F. Fleuret. **Reservoir Boosting : Between Online and Offline Ensemble Learning**. In *Proceedings of the international conference on Neural Information Processing Systems (NIPS)*, pages 1412–1420, 2013

C. Dubout and F. Fleuret. **Deformable Part Models with Individual Part Scaling**. In *Proceedings of the British Machine Vision Conference (BMVC)*, pages 28.1–28.10, 2013

C. Dubout and F. Fleuret. **Accelerated Training of Linear Object Detectors**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, pages 572–577, 2013

R. Sznitman, C. Becker, F. Fleuret, and P. Fua. **Fast Object Detection with Entropy-Driven Evaluation**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 3270–3277, 2013

L. Lefakis and F. Fleuret. **Macro-Action Discovery Based on Change Point Detection and Boosting**. In *Proceedings of the IEEE International Conference on Machine Learning and Applications (ICMLA)*, volume 1, pages 574–577, 2012

N. Suditu and F. Fleuret. **Iterative Relevance Feedback with Adaptive Exploration / Exploitation Trade-off**. In *Proceedings of the ACM Conference on Information and Knowledge Management (CIKM)*, pages 1323–1331, 2012

C. Dubout and F. Fleuret. **Exact Acceleration of Linear Object Detectors**. In *Proceedings of the European Conference on Computer Vision (ECCV)*, pages 301–311, 2012

R. Lefort and F. Fleuret. **A tree-based distance between distributions: application to classification of neurons**. In *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal*

Processing (ICASSP), pages 2237–2240, 2012

C. Dubout and F. Fleuret. **Boosting with Maximum Adaptive Sampling**. In *Proceedings of the international conference on Neural Information Processing Systems (NIPS)*, pages 1332–1340, 2011

C. Dubout and F. Fleuret. **Tasting Families of Features for Image Classification**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 929–936, 2011

N. Suditu and F. Fleuret. **HEAT: Iterative Relevance Feedback with One Million Images**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 2118–2125, 2011

H. Ben Shitrit, J. Berclaz, F. Fleuret, and P. Fua. **Tracking Multiple Objects under Global Appearance Constraints**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 137–144, 2011

F. Fleuret, P. Abbet, C. Dubout, and L. Lefakis. **The MASH project**. In *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD)*, pages 626–629, 2011

K. Ali, D. Hasler, and F. Fleuret. **FlowBoost – Appearance Learning from Sparsely Annotated Video**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1433–1440, 2011

G. Gonzalez, E. Turetken, F. Fleuret, and P. Fua. **Delineating Trees in Noisy 2D Images and 3D Image Stacks**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 2799–2806, 2010

L. Lefakis and F. Fleuret. **Joint Cascade Optimization Using a Product of Boosted Classifiers**. In *Proceedings of the international conference on Neural Information Processing Systems (NIPS)*, pages 1315–1323, 2010

J. Berclaz, F. Fleuret, and P. Fua. **Multiple Object Tracking using Flow Linear Programming**. In *Proceedings of the 12th IEEE International Workshop on Performance Evaluation of Tracking and Surveillance (Winter-PETS)*, pages 1–8, 2009

J. Berclaz, A. Shahrokni, F. Fleuret, J. Ferryman, and P. Fua. **Evaluation of Probabilistic Occupancy Map People Detection for Surveillance Systems**. In *Proceedings of the IEEE International Workshop on Performance Evaluation of Tracking and Surveillance (PETS)*, pages 55–62, 2009

K. Ali, F. Fleuret, D. Hasler, and P. Fua. **Joint Pose Estimator and Feature Learning for Object Detection**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 1373–1380, 2009

G. Gonzalez, F. Fleuret, and P. Fua. **Learning Rotational Features for Filament Detection**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1582–1589, 2009

G. Gonzalez, F. Aguet, F. Fleuret, M. Unser, and P. Fua. **Steerable Features for Statistical 3D Dendrite Detection**. In *Proceedings of the International Conference on Medical Image Computing and Computer*

Assisted Intervention (MICCAI), pages 625–632, 2009

J. Berclaz, F. Fleuret, and P. Fua. **Multi-Camera Tracking and Atypical Motion Detection with Behavioral Maps**. In *Proceedings of the European Conference on Computer Vision (ECCV)*, pages 112–125, 2008

G. Gonzalez, F. Fleuret, and P. Fua. **Automated Delineation of Dendritic Networks in Noisy Image Stacks**. In *Proceedings of the European Conference on Computer Vision (ECCV)*, pages 214–227, 2008

J. Berclaz, F. Fleuret, and P. Fua. **Principled Detection-by-classification from Multiple Views**. In *Proceedings of the International Conference on Computer Vision Theory and Applications (VISAPP)*, volume 2, pages 375–382, 2008

A. Lanza, L. Di Stefano, J. Berclaz, F. Fleuret, and P. Fua. **Robust Multi-View Change Detection**. In *Proceedings of the British Machine Vision Conference (BMVC)*, 2007

G. Blanchard and F. Fleuret. **Occam's Hammer**. In *Proceedings of the Annual Conference on Learning Theory (COLT)*, pages 112–126, 2007

J. Berclaz, F. Fleuret, and P. Fua. **Robust People Tracking with Global Trajectory Optimization**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, volume 1, pages 744–750, 2006

M. Oezuysal, V. Lepetit, F. Fleuret, and P. Fua. **Feature Harvesting for Tracking-by-Detection**. In *Proceedings of the European Conference on Computer Vision (ECCV)*, volume 3953, pages 592–605, 2006

F. Fleuret and W. Gerstner. **A Bayesian Kernel for the Prediction of Neuron Properties from Binary Gene Profiles**. In *Proceedings of the IEEE International Conference on Machine Learning and Applications (ICMLA)*, pages 129–134, 2005

F. Fleuret and G. Blanchard. **Pattern Recognition from One Example by Chopping**. In *Proceedings of the international conference on Neural Information Processing Systems (NIPS)*, pages 371–378, 2005

F. Fleuret, R. Lengagne, and P. Fua. **Fixed Point Probability Field for Complex Occlusion Handling**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, volume 1, pages 694–700, 2005

A. Shahrokni, F. Fleuret, and P. Fua. **Classifier-based Contour Tracking for Rigid and Deformable Objects**. In *Proceedings of the British Machine Vision Conference (BMVC)*, volume 2, pages 699–708, 2005

S. Boughorbel, J-P. Tarel, F. Fleuret, and N. Boujemaa. **The GCS Kernel For SVM Based Image Recognition**. In *Proceedings of the International Conference on Artificial Neural Networks (ICANN)*, volume 2, pages 595–600, 2005

S. Boughorbel, J-P. Tarel, and F. Fleuret. **Non-Mercer Kernel for SVM Object Recognition**. In *Proceedings of the British Machine Vision Conference (BMVC)*, pages 137–146, 2004

N. Boujemaa, F. Fleuret, V. Gouet, and H. Sahbi. **Automatic Textual Annotation of Video News Based on Semantic Visual Object Extraction**. In *Proceedings of the conference of the International Society*

for *Optical Engineering (SPIE)*, volume 5307, pages 329–339, 2004

F. Fleuret and H. Sahbi. **Scale Invariance of Support Vector Machines based on the Triangular Kernel**. In *Proceedings of the workshop on Statistical and Computational Theories of Vision of the IEEE International Conference on Computer Vision (ICCV/SCTV)*, 2003

F. Rossi, B. Conan-Guez, and F. Fleuret. **Functional Data Analysis With Multi Layer Perceptrons**. In *Proceedings of the IEEE International Joint Conference on Neural Networks (IJCNN)*, pages 2843–2848, 2002

F. Rossi, B. Conan-Guez, and F. Fleuret. **Theoretical Properties of Functional Multi Layer Perceptrons**. In *Proceedings of the European Symposium on Artificial Neural Networks (ESANN)*, pages 7–12, 2002

F. Fleuret and D. Geman. **Fast Face Detection with Precise Pose Estimation**. In *Proceedings of the IEEE International Conference on Pattern Recognition (ICPR)*, volume 1, pages 235–238, 2002

N. Boujemaa, F. Fauqueur, M. Ferecatu, F. Fleuret, V. Gouet, B. Le Saux, and H. Sahbi. **Interactive Specific and Generic Image Retrieval**. In *Proceedings of the international workshop on Multi-Media Content Based Indexing and Retrieval (MMCBIR)*, 2001

F. Fleuret and J-M. Vézien. **Détection de visages dans des séquences vidéo à l'aide d'arbres de décision**. In *Actes de la conférence Reconnaissance des Formes et Intelligence Artificielle (RFIA)*, volume 1, pages 17–25, 2000

F. Fleuret and D. Geman. **Apprentissage hiérarchique pour la détection de visages**. In *Actes de la conférence Reconnaissance des Formes et Intelligence Artificielle (RFIA)*, volume 2, pages 349–357, 2000

F. Fleuret and D. Geman. **Graded learning for object detection**. In *Proceedings of the workshop on Statistical and Computational Theories of Vision of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR/SCTV)*, 1999

L. Oisel, F. Fleuret, P. Horain, L. Morin, J. M. Vézien, F. Prêteux, A. Gagalowicz, C. Labit, and P. Leray. **Analyse de séquences non calibrées pour la reconstruction 3D de scènes**. In *Actes de la conférence Reconnaissance des Formes et Intelligence Artificielle (RFIA)*, volume 1, pages 189–198, 1998

B. Jedynek and F. Fleuret. **Reconnaissance d'objets 3D à l'aide d'arbres de classification**. In *Actes de la conférence Images et Communication (IMAGECOM)*, 1996

Miscellaneous

F. Fleuret. **Modèles Génératifs et Efficacité Algorithmique pour la Prédiction**. Habilitation dissertation, University of Paris XIII, 2006

F. Fleuret and H. Sahbi. **Coarse-to-fine object detection**. *ERCIM News*, 55, 2003

F. Fleuret. **Détection hiérarchique de visages par apprentissage statistique**. PhD thesis, University of Paris VI, 2000