François Fleuret

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

Employment

Since November 2024

Joint position as **Research Scientist** at Meta Fundamental AI Research, FAIR – Core Learning and Reasoning, and **Full Professor**, department of Computer Science, University of Geneva, Switzerland.

July 2020 – November 2024

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

September 2019 – November 2024

Adjunct Professor, School of Engineering, EPFL, Switzerland

May 2021 – November 2024

External Research Fellow, Idiap research institute, Switzerland.

March 2011 – August 2019

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

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

2023, 2024

11x001: Introduction à la programmation des algorithmes (42h, 70+ students), University of Geneva.

14x050: Deep Learning (56h, 40+ students), University of Geneva.

2021, 2022

11x001: Introduction à la programmation des algorithmes (42h, 70+ students), University of Geneva.

14x050: Deep Learning (56h, 40+ students), University of Geneva.

EE-559: Deep Learning (56h, 460+ students), EPFL.

2020

11x001: Introduction à la programmation des algorithmes (42h, 70+ students), 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) IfI 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 "Structural Improvements of Attention Models" (746k CHF), 2024-2027.
- **Principal investigator** of the Hasler Foundation grant "Interpretability, safety, and efficiency through representation disentanglement" (205k CHF / 410k CHF*), 2022-2025.
- **Principal investigator** of the Swiss Innovation Agency grant "AI FINESSE: AI Fine SenSes Engine" (249k CHF), 2022-2024.
- **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 for 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 Visions 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), 2012–2022.
- **Board member**, Science Innovation Hub, University of Geneva since 2020.
- **Board member**, Centre Universitaire Informatique, University of Geneva since 2021.
- **Area Chair**, International Conference on Machine Learning (ICML), 2022.
- **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 talk at the conference on Generative models and uncertainty quantification (Copenhagen, DK), 2023.
- Invited speaker, Introductory course on AI to members of the Swiss Federal Assembly (Parldigi MasterClass, online), 2021.
- 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, $\sim$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, $\sim$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

- Youssef Saied, **PhD supervision** on interpretable representations for reinforcement learning (University of Geneva).
- Eloi Alonso, **PhD supervision** on efficient reinforcement learning (University of Geneva).
- 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 (EPFL/Idiap).
- Matteo Pagliardini, **PhD co-supervision** with Prof. Martin Jaggi on question answering with a knowledge base (EPFL).

Awarded

- Sepehr Johari, **PhD supervision** on stereo reconstruction with active sensors (EPFL/Idiap).
- Kyle Matoba, **PhD supervision** on formal guarantees for trustworthy deep neural networks (EPFL/Idiap).
- Evann Courdier, **PhD supervision** on computationally efficient deep-learning architectures (EPFL/Idiap).
- Prabhu Teja, **PhD supervision** on transfer learning for semantic segmentation (EPFL/Idiap), 2023.
- Angelos Katharopoulos, **PhD supervision** on importance sampling for large-scale training (EPFL/Idiap), 2022.
- Suraj Srinivas, **PhD supervision** on learning deep structures from data (EPFL/Idiap), 2021.
- 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, member of the Board of Directors, since 2018, chairman 2018-2021.
- **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

F. Fleuret. *The Little Book of Deep Learning*. lulu.com, 2023

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

A. Pannatier, K. Matoba, and F. Fleuret. **Inference from Real-World Sparse Measurements**. *Transactions on Machine Learning Research (TMLR)*, 2024

K. Matoba, N. Dimitriadis, and F. Fleuret. **Benefits of Max Pooling in Neural Networks: Theoretical**

and Experimental Evidence. *Transactions on Machine Learning Research (TMLR)*, 2023

B. Máté and F. Fleuret. **Learning Interpolations between Boltzmann Densities**. *Transactions on Machine Learning Research (TMLR)*, 2023

S. Kandul, V. Micheli, J. Beck, T. Burri, F. Fleuret, M. Kneer, and M. Christen. **Human control redressed: Comparing AI and human predictability in a real-effort task**. *Computers in Human Behavior Reports*, 10:100290, 2023

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

M. Pagliardini, A. Mohtashami, F. Fleuret, and M. Jaggi. **DenseFormer: Enhancing Information Flow in Transformers via Depth Weighted Averaging**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, 2024

E. Alonso, A. Jelley, V. Micheli, A. Kanervisto, A. Storkey, T. Pearce, and F. Fleuret. **Diffusion for World Modeling: Visual Details Matter in Atari**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, 2024

A. Sinha and F. Fleuret. **DeepEMD: A Transformer-based Fast Estimation of the Earth Mover's Distance**. In *Proceedings of the IEEE International Conference on Pattern Recognition (ICPR)*, 2024

A. Pannatier, E. Courdier, and F. Fleuret. **σ-GPTs: A New Approach to Autoregressive Models**. In *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD)*, 2024. to appear

V. Micheli, E. Alonso, and F. Fleuret. **Efficient World Models with Time-Aware and Context-Augmented Tokenization**. In *Proceedings of the International Conference on Machine Learning (ICML)*, 2024. to appear

K. Wang, N. Dimitriadis, G. Ortiz-Jimenez, F. Fleuret, and P. Frossard. **Localizing Task Information for Improved Model Merging and Compression**. In *Proceedings of the International Conference on Machine Learning (ICML)*, 2024. to appear

M. Pagliardini, D. Paliotta, M. Jaggi, and F. Fleuret. **Faster Causal Attention Over Large Sequences Through Sparse Flash Attention**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, pages 59808–59831, 2023

A. Sinha, D. Paliotta, B. Máté, J. Raine, T. Golling, and F. Fleuret. **SUPA: A Lightweight Diagnostic**

Simulator for Machine Learning in Particle Physics. In *Proceedings of the international conference on Neural Information Processing Systems Datasets and Benchmarks Track (NeurIPS)*, pages 64829–64856, 2023

F. Mai, A. Pannatier, F. Fehr, H. Chen, F. Marelli, F. Fleuret, and J. Henderson. **HyperMixer: An MLP-based Low Cost Alternative to Transformers**. In *Proceedings of the Annual Meeting of the Association for Computational Linguistics (ACL)*, 2023

N. Dimitriadis, P. Frossard, and F. Fleuret. **Pareto Manifold Learning: Tackling multiple tasks via ensembles of single-task models**. In *Proceedings of the International Conference on Machine Learning (ICML)*, 2023

M. Johari, C. Carta, and F. Fleuret. **ESLAM: Efficient Dense SLAM System Based on Hybrid Representation of Signed Distance Fields**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, 2023

V. Micheli, E. Alonso, and F. Fleuret. **Transformers are Sample Efficient World Models**. In *Proceedings of the International Conference on Learning Representations (ICLR)*, 2023

M. Pagliardini, M. Jaggi, F. Fleuret, and S. P. Karimireddy. **Agree to Disagree: Diversity through Disagreement for Better Transferability**. In *Proceedings of the International Conference on Learning Representations (ICLR)*, 2023

E. Courdier, T. Prabhu, and F. Fleuret. **PAUMER: Patch Pausing Transformer for Semantic Segmentation**. In *Proceedings of the British Machine Vision Conference (BMVC)*, 2022

S. Srinivas, K. Matoba, H. Lakkaraju, and F. Fleuret. **Flatten the Curve: Efficiently Training Low-Curvature Neural Networks**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, pages 25951–25964, 2022

B. Máté, S. Klein, T. Golling, and F. Fleuret. **Flowification: Everything is a normalizing flow**. In *Proceedings of the international conference on Neural Information Processing Systems (NeurIPS)*, 2022

M. Johari, Y. Lepoittevin, and F. Fleuret. **GeoNeRF: Generalizing NeRF with Geometry Priors**. In *Proceedings of the IEEE international conference on Computer Vision and Pattern Recognition (CVPR)*, 2022

E. Courdier and F. Fleuret. **Borrowing from yourself: Faster future video segmentation with partial channel update**. In *Proceedings of the IEEE International Conference on Pattern Recognition (ICPR)*, pages 1–8, 2022

A. Pannatier, R. Picatoste, and F. Fleuret. **Efficient Wind Speed Nowcasting with GPU-Accelerated Nearest Neighbors Algorithm**. In *Proceedings of the SIAM International Conference on Data Mining (SDM)*, 2022

M. Johari, C. Carta, and F. Fleuret. **DepthInSpace: Exploitation and Fusion of Multiple Video Frames for Structured-Light Depth Estimation**. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, pages 6039–6048, 2021

V. Micheli and F. Fleuret. **Language Models are Few-Shot Butlers**. In *Proceedings of the international*

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