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Pierre-Antoine Bannier

Employment

2022–Now **Research scientist**, **Owkin**
Medical imaging team

2021 **Research scientist**, **Inria Paris-Saclay**
- Subject: Bi-level optimization for sparse neuroimaging models
- Supervisors: A. Gramfort and J. Salmon
- Team: Parietal

Education

2020–2022 **MSc in Data Science**, **Ecole Polytechnique**
- GPA: 3.96/4
- Supervisor: M. Massias
- Thesis: Non-smooth convex and non-convex optimization

2015–2020 **Master in Management, Grande Ecole Program**, **HEC Paris**
- Graduated with Highest Honors
- Certificate of excellence for outstanding academic achievement

Publications

2023 Deep learning model for identification and characterization of HER2-low tumors
Nature Modern Pathology
P.-A. Bannier, L. Herpin, R. Dubois, L. Van Praet, C. Maussion, E. Amonoo, A. Mera, J. Timbres, C. Gillett, E. Sawyer, P. Gazinska, P. Ziolkowski, R. Salgado, S. Irshad.
Under review

2023 Deep learning model for automated quantification of HER2 expression in invasive breast cancers from immunohistochemical whole slide images
San Antonio Breast Cancer Symposium (SABCS) proceedings
P.-A. Bannier, L. Herpin, R. Dubois, L. Van Praet, C. Maussion, E. Amonoo, A. Mera, J. Timbres, C. Gillett, E. Sawyer, P. Gazinska, P. Ziolkowski, R. Salgado, S. Irshad.
Abstract

2023 AI-based identification of FGFR3 mutation status from routine histology slides of muscle-invasive bladder cancer
Journal of Clinical Oncology (JCO)
C. Saillard, **P.-A. Bannier**, P. Mann, C. Maussion, C. Matek, A. Hartmann, M. Eckstein
Abstract

2022 Beyond L1: Faster and better sparse models with skglm
Neural Information Processing Systems (NeurIPS)
Q. Bertrand, Q. Klopfenstein, **P.-A. Bannier**, G. Gidel, M. Massias
arXiv

2022 Benchopt: Reproducible, efficient, and collaborative optimization benchmarks
Neural Information Processing Systems (NeurIPS)
T. Moreau, M. Massias, A. Gramfort, P. Ablin, **P.-A. Bannier**, B. Charlier, M. Dagréou, T. Dupre la Tour, G. Durif, C. F Dantas, Q. Klopfenstein, J. Larsson, E. Lai, T. Lefort, B. Malézieux, B. Moufad, B. T Nguyen, A. Rakotomamonjy, Z. Ramzi, J. Salmon, S. Vaiter
arXiv

2021 Electromagnetic neural source imaging under sparsity constraints with SURE-based hyperparameter tuning
Medical imaging meets NeurIPS 2021
P.-A. Bannier, Q. Bertrand, J. Salmon, A. Gramfort
arXiv

Talks

2023 San Antonio Breast Cancer Symposium, Artificial intelligence session (poster presentation)
Deep learning model for automated quantification of HER2 expression in invasive breast cancers from immunohistochemical whole slide images

2022 NeurIPS 2022 in Paris
Beyond L1: Faster and Better Sparse models with skglm

2022 Université Paris-Saclay, Journée Des Sciences Etudiants 2022
skglm: a faster solver for high-dimensional convex and non-convex problems

Awards

2020 **Kaggle**
- 44th place (top 2%) on the Tweet Sentiment Extraction competition (Silver medal)
- 75th place (top 5%) on the Jigsaw Multilingual Toxic Comment Classification competition (Silver medal)
- 161th place (top 5%) on the SIIM-ISIC Melanoma Classification competition (Silver medal)
- 123rd place (top 0.1%) as a top notebook contributor (Notebooks master)

Reviewing

Journals Computo

Conferences NeurIPS 2023, ICLR 2024

Main open-source contributions

2023 **bark.cpp**, 270 stars
Creator
Fast memory-efficient implementation of SunoAI's Bark text-to-speech model in C++ for inference on the edge
GitHub

2022 **skglm**, 100 stars
Co-creator and core contributor
Fast optimizer for high-dimensional convex and non-convex non-smooth optimization problem (merged in scikit-learn-contrib)
GitHub

2023 **ggml**, 7.6k stars
Core contributor
Efficient tensor calculus for machine learning in C
GitHub

Skills

Proficient Python, C, C++, SciPy stack, PyTorch, Bash, Git

Experience Rust, Typescript, NodeJS, React, PostgresSQL, MongoDB, Docker

Languages

French Native

English Fluent

Spanish C2