KYLE CRANMER

EXPERIENCE

David R. Anderson Director Data Science Institute, UW-Madison — 2022-Present

Professor of Physics with Affiliate Appointments in Computer Science & Statistics

Leads the Data Science Institute, a key to the university's strategic initiative in data science.
Leads UW-Madison's RISE-AI Headquarters

Visiting Scientist (while on sabbatical), FAIR (Facebook) / Meta AI — 2021-2022

Worked with Yann LeCun, Léon Bottou at FAIR / MetaAI focusing on self-supervised learning, probabilistic & causal machine learning, and advising on AI for Science projects.

Visiting Junior Faculty, Institute for Advanced Study — 2018

Focusing on AI for Science: Lattice Field Theory & Simulation-Based Inference

Professor of Data Science, NYU — 2015-2022

Core member of the group that created the Center for Data Science at NYU.
Served as Executive Director of the Moore-Sloan Data Science Environment (2018-2022).
Member of Computational Intelligence, Vision, and Robotics (CILVR) Lab at NYU (2018-2022)

Assistant, Associate, Full Professor of Physics, NYU — 2007-2022

Initially focused on experimental particle physics at the Large Hadron Collider; established data analysis and statistical techniques used for the discovery of the Higgs boson in 2012 (Nobel prize in 2013). Received PECASE award from President Bush in 2007 for early work. Pivoted to AI/ML and data science for physical sciences in 2014, while maintaining active research in particle physics.

EDUCATION

- PhD Physics, University of Wisconsin—Madison — 2005
- BA in Physics & Mathematics, Rice University — 1999

PUBLICATION HIGHLIGHTS

- > 1,200 publications with >344,000 citations (Google Scholar); h-index 239
    - 9th highest citation of in google scholar for "Deep Learning" [link]
    - 10 authors or less: 95 papers, >13,000 citations, [link]
- Higgs discovery paper (1 of 9 core authors), 2012 — 24,000 citations [link]
- Key paper that established statistical procedures for particle physics — >10,000 citations [link]
- Standard citation for Simulation-Based Inference in PNAS, 2020 — 1,000 citations [link]
- Machine learning and the physical sciences review, 2019 — 2,400 citations [link]
- 11 papers with DeepMind on AI for field theory (inc. Nature review paper) — 570 citations [link]
- 2 papers with DeepMind on AI for dynamical systems- 760 citations [link, link]
- 1 paper with FAIR/Meta AI on AI for theoretical physics topics [link]

SPEAKING HIGHLIGHTS

- Keynote speaker ADSA Data Science and AI Leadership Summit - 2025
- Keynote speaker Helmholtz AI (Germany's largest research organization) - 2024
- Invited speaker Association for the Advancement of Artificial Intelligence (AAAI) workshop on explainable AI - 2024
- Invited speaker AI for Science workshop at NeurIPS - 2023
- Keynote speaker Learning on Graphs — 2023
- Hans Jensen memorial lecture, Heidelberg Graduate Days - 2023
- Invited panelist for plenary panel at IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) [~10,000 registered] - 2023
- Keynote speaker AISTATS conference - 2021
- Sackler Colloquium, National Academy of Sciences - 2019
- Keynote speaker NeurIPS conference [~6,000 registered] - 2016

PUBLIC ENGAGEMENT HIGHLIGHTS

- 18K twitter followers
- Webby award for Crayfis citizen science project - 2015
- NPR Here and Now - Dec 2015
- TEDx Binghamton — 2013
- Star Talk Radio with Neil deGrass Tyson and Bill Nye "the science guy" - 2012
- Invited talk, Strata Conference, NYC 2011
- Invited talk, Ideas Economy: information, Economist magazine — 2011
- Guest on Charlie Rose News Hour - 2010

PROFESSIONAL SERVICE HIGHLIGHTS

- Editor-in-Chief Machine Learning: Science and Technology (IOP Publishing) — 2022-present
- Action Editor, Journal of Machine Learning Research (JMLR) — 2024-present
- Member DOE Basic Needs Assessment for AI in high-energy physics — 2024
- Member of the Particle Physics Project Prioritization Panel (P5) for NSF and DOE (responsible for proposing funding priorities for ~$17B over the next 10 years) — 2023
- Member of the High Energy Physics Advisory Panel (DOE FACA) — 2016-2019
- Executive Director of Moore-Sloan Data Science Environment — 2018-2022
- Co-founded Machine Learning for Physical Sciences workshop series at NeurIPS — 2017-present
- Co-founded Hammers and Nails workshop series — 2017-present
- Lead organizer of several international conferences and workshops with 100-600 participants

AWARDS

- Inaugural Margot and Tom Pritzker Prize in for AI in Science Research Excellence, 2025
- Breakthrough Prize in Fundamental Physics, 2025
- Fellow of the American Physical Society, 2021
- Kavli Frontiers of Science Fellow, 2018 & 2009
- Visiting Junior Faculty, Institute for Advanced Study, 2018
- Chaire Georges Lemaître 2017, Université Catholique de Louvain, Belgium, 2017
- Presidential Early Career Award for Science and Engineering - 2007

SELECTED PUBLICATIONS

Full list of > 1,100 publications with >310,000 citations (Google Scholar); h-index 231

Simulation-based Inference Methodology

The frontier of simulation-based inference
Kyle Cranmer (New York U., CCPP), Johann Brehmer (New York U., CCPP), Gilles Louppe (Liege U.)
e-Print: 1911.01429 [stat.ML]
DOI: 10.1073/pnas.1912789117
Published in: Proc.Nat.Acad.Sci. 117 (2020) 48, 30055-30062

Mining gold from implicit models to improve likelihood-free inference
Johann Brehmer (New York U.), Gilles Louppe (Liege U.), Juan Pavez (Santa Maria U., Valparaiso), Kyle Cranmer (New York U.)
e-Print: 1805.12244 [stat.ML]
DOI: 10.1073/pnas.1915980117 (publication)
Published in: Proc.Nat.Acad.Sci. 117 (2020) 10, 5242-5249

Constraining Effective Field Theories with Machine Learning
Johann Brehmer (New York U.), Kyle Cranmer (New York U.), Gilles Louppe (Liege U.), Juan Pavez (Santa Maria U., Valparaiso)
e-Print: 1805.00013 [hep-ph]
DOI: 10.1103/PhysRevLett.121.111801
Published in: Phys.Rev.Lett. 121 (2018) 11, 111801

A Guide to Constraining Effective Field Theories with Machine Learning
Johann Brehmer (New York U.), Kyle Cranmer (New York U.), Gilles Louppe (Liege U.), Juan Pavez (Santa Maria U., Valparaiso)
e-Print: 1805.00020 [hep-ph]
DOI: 10.1103/PhysRevD.98.052004
Published in: Phys.Rev.D 98 (2018) 5, 052004

Likelihood-free inference with an improved cross-entropy estimator
Markus Stoye (Imperial Coll., London), Johann Brehmer (New York U., CCPP), Gilles Louppe (Liege U.), Juan Pavez (Santa Maria U., Valparaiso), Kyle Cranmer (New York U., CCPP)
e-Print: 1808.00973 [stat.ML]
Published in: NeurIPS workshop on Machine Learning and Physical Sciences (2018)

Adversarial Variational Optimization of Non-Differentiable Simulators
Gilles Louppe, Joeri Hermans, Kyle Cranmer
e-Print: 1707.07113 [stat.ML]
Published in: PMLR 89:1438-1447, 2019

Unifying generative models and exact likelihood-free inference with conditional bijections
Kyle Cranmer (New York U.), Gilles Louppe (New York U.)
DOI: 10.5281/zenodo.198541

Generative Models: Normalizing Flows on Manifolds

Flows for simultaneous manifold learning and density estimation
Johann Brehmer, Kyle Cranmer
e-Print: 2003.13913 [stat.ML]
Published in Advances in Neural Information Processing Systems 33 (NeurIPS 2020)

Normalizing Flows on Tori and Spheres
Danilo Jimenez Rezende, George Papamakarios, Sebastien Racaniere, Michael S. Albergo, Gurtej Kanwar et al.
e-Print: 2002.02428 [stat.ML]
Published in: International Conference on Machine Learning (ICML) 2020

AI-Enhanced Sampling for Lattice Field Theory

Advances in machine-learning-based sampling motivated by lattice quantum chromodynamics
Kyle Cranmer (Wisconsin U., Madison), Gurtej Kanwar (Bern U.), Sebastien Racaniere (Unlisted, UK), Danilo J. Rezende (Unlisted, UK), Phiala E. Shanahan (MIT, Cambridge, CTP and IAIFI, Cambridge)
e-Print: 2309.01156 [hep-lat]
DOI: 10.1038/s42254-023-00616-w
Published in: Nature Rev.Phys. 5 (2023) 9, 526-535

Flow-based sampling in the lattice Schwinger model at criticality
Michael S. Albergo (New York U., CCPP), Denis Boyda (Argonne, ALCF and MIT, Cambridge, CTP and IAIFI, Cambridge), Kyle Cranmer (New York U., CCPP), Daniel C. Hackett (MIT, Cambridge, CTP and Harvard U. and IAIFI, Cambridge), Gurtej Kanwar (MIT, Cambridge, CTP and IAIFI, Cambridge and U. Bern, AEC and Bern U.) et al.
e-Print: 2202.11712 [hep-lat]
DOI: 10.1103/PhysRevD.106.014514 (publication)
Published in: Phys.Rev.D 106 (2022) 1, 014514

Sampling using SU(N) gauge equivariant flows
Denis Boyda (MIT, Cambridge, CTP), Gurtej Kanwar (MIT, Cambridge, CTP), Sebastien Racaniere (Unlisted, UK), Danilo Jimenez Rezende (Unlisted, UK), Michael S. Albergo (New York U., CCPP) et al.
e-Print: 2008.05456 [hep-lat]
DOI: 10.1103/PhysRevD.103.074504
Published in: Phys.Rev.D 103 (2021) 7, 074504

Flow-based sampling for multimodal distributions in lattice field theory
Daniel C. Hackett (MIT, Cambridge, CTP and IAIFI, Cambridge), Chung-Chun Hsieh (Taiwan, Natl. Taiwan U.), Michael S. Albergo (New York U., CCPP), Denis Boyda (Argonne, ALCF and MIT, Cambridge, CTP and IAIFI, Cambridge), Jiunn-Wei Chen (Taiwan, Natl. Taiwan U. and NCTS, Taipei)
e-Print: 2107.00734 [hep-lat]

Flow-based sampling for fermionic lattice field theories
Michael S. Albergo (New York U., CCPP), Gurtej Kanwar (MIT, Cambridge, CTP and IAIFI, Cambridge), SÃ©bastien RacaniÃ¨re (Unlisted, UK), Danilo J. Rezende (Unlisted, UK), Julian M. Urban (U. Heidelberg, ITP) et al.
e-Print: 2106.05934 [hep-lat]
DOI: 10.1103/PhysRevD.104.114507 (publication)
Published in: Phys.Rev.D 104 (2021) 11, 114507

Introduction to Normalizing Flows for Lattice Field Theory
Michael S. Albergo (New York U.), Denis Boyda (MIT, Cambridge, CTP and IAIFI, Cambridge), Daniel C. Hackett (MIT, Cambridge, CTP and IAIFI, Cambridge), Gurtej Kanwar (MIT, Cambridge, CTP and IAIFI, Cambridge), Kyle Cranmer (New York U.) et al.
e-Print: 2101.08176 [hep-lat]

Equivariant flow-based sampling for lattice gauge theory
Gurtej Kanwar (MIT), Michael S. Albergo (New York U., CCPP), Denis Boyda (MIT), Kyle Cranmer (New York U., CCPP), Daniel C. Hackett (MIT) et al.
e-Print: 2003.06413 [hep-lat]
DOI: 10.1103/PhysRevLett.125.121601
Published in: Phys.Rev.Lett. 125 (2020) 12, 121601

AI for Astrophysics

Neural simulation-based inference approach for characterizing the Galactic Center Î³-ray excess
Siddharth Mishra-Sharma (MIT, Cambridge, CTP and IAIFI, Cambridge and MIT, Cambridge, Dept. Phys. and Harvard U. and New York U., CCPP and New York U.), Kyle Cranmer (New York U., CCPP)
e-Print: 2110.06931 [astro-ph.HE]
DOI: 10.1103/PhysRevD.105.063017 (publication)
Published in: Phys.Rev.D 105 (2022) 6, 063017

Semi-parametric γ-ray modeling with Gaussian processes and variational inference
Siddharth Mishra-Sharma (New York U.), Kyle Cranmer (New York U.)
e-Print: 2010.10450 [astro-ph.HE]
Published in: Machine Learning and the Physical Sciences Workshop at NeurIPS 2020

Mining for Dark Matter Substructure: Inferring subhalo population properties from strong lenses with machine learning
Johann Brehmer (New York U., CCPP and New York U. (main)), Siddharth Mishra-Sharma (New York U., CCPP), Joeri Hermans (Liege U.), Gilles Louppe (Liege U.), Kyle Cranmer (New York U., CCPP and New York U. (main))
e-Print: 1909.02005 [astro-ph.CO]
DOI: 10.3847/1538-4357/ab4c41 (publication)
Published in: Astrophys.J. 886 (2019) 1, 49

Sets, Graphs, and Trees: AI for or Inspired by Jet Physics

The Quantum Trellis: A classical algorithm for sampling the parton shower with interference effects
Sebastian Macaluso (New York U., CCPP), Kyle Cranmer (New York U., CCPP)
e-Print: 2112.12795 [hep-ph].
NeurIPS workshop on Machine Learning and Physical Sciences

Reframing Jet Physics with New Computational Methods
Kyle Cranmer (New York U.), Matthew Drnevich (New York U.), Sebastian Macaluso (New York U.), Duccio Pappadopulo (New York U.)
e-Print: 2105.10512 [hep-ph]
DOI: 10.1051/epjconf/202125103059
Published in: EPJ Web Conf. 251 (2021), 03059

Exact and Approximate Hierarchical Clustering Using A*
Craig S. Greenberg (NIST, Boulder), Sebastian Macaluso (New York U., CCPP), Nicholas Monath (Massachusetts U., Amherst), Avinava Dubey (Google Inc.), Patrick Flaherty
e-Print: 2104.07061 [cs.LG]
Published in: Proceedings of the Thirty-Seventh Conference on Uncertainty in Artificial Intelligence, PMLR 161:2061-2071, 2021.

Hierarchical clustering in particle physics through reinforcement learning
Johann Brehmer (New York U.), Sebastian Macaluso (New York U.), Duccio Pappadopulo (New York U.), Kyle Cranmer (New York U.)
e-Print: 2011.08191 [cs.AI]
Published in: NeurIPS workshop on Machine Learning and Physical Sciences (2020)

Data Structures & Algorithms for Exact Inference in Hierarchical Clustering
Craig S. Greenberg, Sebastian Macaluso, Nicholas Monath, Ji-Ah Lee, Patrick Flaherty et al.
e-Print: 2002.11661 [cs.DS]
Published in: AISTATS, 2021.

Secondary vertex finding in jets with neural networks
Jonathan Shlomi (Weizmann Inst.), Sanmay Ganguly (Weizmann Inst.), Eilam Gross (Weizmann Inst.), Kyle Cranmer (New York U.), Yaron Lipman (Weizmann Inst.) et al.
e-Print: 2008.02831 [hep-ex]
DOI: 10.1140/epjc/s10052-021-09342-y
Published in: Eur.Phys.J.C 81 (2021) 6, 540

Set2Graph: Learning Graphs From Sets
Hadar Serviansky, Nimrod Segol, Jonathan Shlomi, Kyle Cranmer, Eilam Gross et al.
e-Print: 2002.08772 [cs.LG]
Published in: Advances in Neural Information Processing Systems, 2020

QCD-Aware Recursive Neural Networks for Jet Physics
Gilles Louppe (New York U.), Kyunghyun Cho (New York U.), Cyril Becot (New York U.), Kyle Cranmer (New York U.)
e-Print: 1702.00748 [hep-ph]
DOI: 10.1007/JHEP01(2019)057
Published in: JHEP 01 (2019), 057

Neural Message Passing for Jet Physics
Isaac Henrion, Kyle Cranmer, Joan Bruna, Kyunghyun Cho, Johann Brehmer, Gilles Louppe and Gaspar Rochette
Published in: Deep Learning for Physical Sciences workshop, NeurIPS 2017

Universal Probabilistic Programming

Etalumis: bringing probabilistic programming to scientific simulators at scale
Atılım Güneş Baydin, Lei Shao, Wahid Bhimji, Lukas Heinrich, Lawrence Meadows et al.
e-Print: 1907.03382 [cs.LG]
DOI: 10.1145/3295500.3356180
Published in:, Proceedings of the International Conference for High Performance Computing, Networking, Storage, and Analysis (SC19)

Efficient Probabilistic Inference in the Quest for Physics Beyond the Standard Model
Atılım Güneş Baydin (Oxford U.), Lukas Heinrich (New York U.), Wahid Bhimji (LBL, Berkeley), Lei Shao (Intel, Chandler), Saeid Naderiparizi et al.
e-Print: 1807.07706 [cs.LG]
Published in: In Advances in Neural Information Processing Systems 33 (NeurIPS)

Improvements to Inference Compilation for Probabilistic Programming in Large-Scale Scientific Simulators
Mario Lezcano Casado, Atılım Güneş Baydin, David Martinez Rubio, Tuan Anh Le, Frank Wood, Lukas Heinrich, Gilles Louppe, Kyle Cranmer, Wahid Bhimji, Karen Ng and Prabhat
e-Print: 1712.07901 [cs.AI]
Published in: Deep Learning for Physical Sciences workshop, NeurIPS 2017

Graph Networks and Neuro-Symbolic Approaches for Dynamical Systems

Discovering Symbolic Models from Deep Learning with Inductive Biases
Miles Cranmer, Alvaro Sanchez-Gonzalez, Peter Battaglia, Rui Xu, Kyle Cranmer et al.
e-Print: 2006.11287 [cs.LG]
Published in: Advances in Neural Information Processing Systems 33 (NeurIPS 2020)

Hamiltonian Graph Networks with ODE Integrators
Alvaro Sanchez-Gonzalez (Unlisted, UK), Victor Bapst (Unlisted, UK), Kyle Cranmer (New York U.), Peter Battaglia (Unlisted, UK)
e-Print: 1909.12790 [cs.LG]
Published in: NeurIPS workshop on Machine Learning and Physical Sciences (2019)

Miscellaneous AI for Science

Transforming the bootstrap: using transformers to compute scattering amplitudes in planar N= 4 super Yang-Mills theory
Tianji Cai (SLAC), Garrett W. Merz (Wisconsin U., Madison), Francois Charton (U. Paris-Saclay), Niklas Nolte (U. Paris-Saclay), Matthias Wilhelm (Bohr Inst.) et al.
e-Print: 2405.06107 [cs.LG]
DOI: 10.1088/2632-2153/ad743e
Published in: Mach.Learn.Sci.Tech. 5 (2024) 3, 035073

Robust anomaly detection for particle physics using multi-background representation learning
Abhijith Gandrakota (Fermilab), Lily H. Zhang (New York U., Courant Inst. and Rochester U.), Aahlad Puli (New York U., Courant Inst. and Rochester U.), Kyle Cranmer (Wisconsin U., Madison), Jennifer Ngadiuba (Fermilab) et al.
e-Print: 2401.08777 [hep-ex]
DOI: 10.1088/2632-2153/ad780c
Published in: Mach.Learn.Sci.Tech. 5 (2024) 3, 035082

Inferring the quantum density matrix with machine learning
Kyle Cranmer (New York U., CCPP), Siavash Golkar (New York U., CCPP), Duccio Pappadopulo (New York U., CCPP)
e-Print: 1904.05903 [quant-ph]
Published in: NeurIPS workshop on Machine Learning and Physical Sciences (2019)

Backdrop: Stochastic Backpropagation
Siavash Golkar (New York U.), Kyle Cranmer (New York U.)
e-Print: 1806.01337 [stat.ML]
Published in: NeurIPS workshop on Machine Learning and Physical Sciences (2018)

Modeling Smooth Backgrounds and Generic Localized Signals with Gaussian Processes
Meghan Frate (UC, Irvine), Kyle Cranmer (New York U.), Saarik Kalia (MIT, Cambridge, Dept. Phys.), Alexander Vandenberg-Rodes, Daniel Whiteson (UC, Irvine)
e-Print: 1709.05681 [physics.data-an]

Learning to Pivot with Adversarial Networks
Gilles Louppe (New York U. (main)), Michael Kagan, Kyle Cranmer (New York U.)
e-Print: 1611.01046 [stat.ML]
Published in: Advances in Neural Information Processing Systems 30, pages 981-990, 2017

Parameterized neural networks for high-energy physics
Pierre Baldi (UC, Irvine), Kyle Cranmer (New York U.), Taylor Faucett (UC, Irvine), Peter Sadowski (UC, Irvine), Daniel Whiteson (UC, Irvine)
e-Print: 1601.07913 [hep-ex]
DOI: 10.1140/epjc/s10052-016-4099-4
Published in: Eur.Phys.J.C 76 (2016) 5, 235

AI/ML Reviews

Review of particle physics, Chapter on Machine Learning
Particle Data Group • S. Navas (Granada U., Theor. Phys. Astrophys. and CAFPE, Granada) et al.
DOI: 10.1103/PhysRevD.110.030001 (publication)
Published in: Phys.Rev.D 110 (2024) 3, 030001

Machine learning and the physical sciences
Giuseppe Carleo (Flatiron Inst., New York), Ignacio Cirac (Munich, Max Planck Inst. Quantenopt.), Kyle Cranmer (New York U., CCPP), Laurent Daudet (Unlisted, FR), Maria Schuld (KwaZulu Natal U. and Xanadu Quant. Tech.) et al.
e-Print: 1903.10563 [physics.comp-ph]
DOI: 10.1103/RevModPhys.91.045002 (publication)
Published in: Rev.Mod.Phys. 91 (2019) 4, 045002

Deep Learning and its Application to LHC Physics
Dan Guest (UC, Irvine), Kyle Cranmer (New York U.), Daniel Whiteson (UC, Irvine)
e-Print: 1806.11484 [hep-ex]
DOI: 10.1146/annurev-nucl-101917-021019
Published in: Ann.Rev.Nucl.Part.Sci. 68 (2018), 161-181

Statistics / Old School Machine Learning

Asymptotic formulae for likelihood-based tests of new physics
Glen Cowan (Royal Holloway, U. of London), Kyle Cranmer (New York U.), Eilam Gross (Weizmann Inst.), Ofer Vitells (Weizmann Inst.)
e-Print: 1007.1727 [physics.data-an]
DOI: 10.1140/epjc/s10052-011-1554-0 , 10.1140/epjc/s10052-013-2501-z (erratum)
Published in: Eur.Phys.J.C 71 (2011), 1554, Eur.Phys.J.C 73 (2013), 2501 (erratum)

Frequentist hypothesis testing with background uncertainty
Kyle S. Cranmer (Wisconsin U., Madison)
e-Print: physics/0310108 [physics.data-an]
Published in: eConf C030908 (2003), WEMT004,

Multivariate analysis from a statistical point of view
Kyle S. Cranmer (Wisconsin U., Madison)
e-Print: physics/0310110 [physics.data-an]

Statistics for the LHC: Progress, challenges, and future
Kyle S. Cranmer (New York U.)
DOI: 10.5170/CERN-2008-001.47

Statistical challenges for searches for new physics at the LHC
Kyle Cranmer (Brookhaven)
e-Print: physics/0511028 [physics.data-an]
DOI: 10.1142/9781860948985_0026

Kernel estimation in high-energy physics
Kyle S. Cranmer (Wisconsin U., Madison)
DOI: 10.1016/S0010-4655(00)00243-5
Published in: Comput.Phys.Commun. 136 (2001), 198-207

Challenges in moving the LEP Higgs statistics to the LHC
K.S. Cranmer (Wisconsin U., Madison), B. Mellado (Wisconsin U., Madison), W. Quayle (Wisconsin U., Madison), Sau Lan Wu (Wisconsin U., Madison)
e-Print: physics/0312050 [physics.data-an]
Published in: eConf C030908 (2003), MODT004,

PhysicsGP: A Genetic Programming Approach to Event Selection
Kyle Cranmer (CERN), R. Sean Bowman (Arkansas U., Little Rock)
e-Print: physics/0402030 [physics.data-an]
DOI: 10.1016/j.cpc.2004.12.006
Published in: Comput.Phys.Commun. 167 (2005), 165-176

Multivariate analysis and the search for new particles
Kyle S Cranmer (Wisconsin U., Madison)
Published in: Acta Phys.Polon.B 34 (2003), 6049-6068,

High-Energy Physics - Phenomenology

Effective LHC measurements with matrix elements and machine learning
Johann Brehmer (New York U.), Kyle Cranmer (New York U.), Irina Espejo (New York U.), Felix Kling (UC, Irvine), Gilles Louppe (Liege U.) et al.
e-Print: 1906.01578 [hep-ph]
DOI: 10.1088/1742-6596/1525/1/012022
Published in: J.Phys.Conf.Ser. 1525 (2020) 1, 012022

Better Higgs boson measurements through information geometry
Johann Brehmer (U. Heidelberg, ITP), Kyle Cranmer (New York U., CCPP and New York U.), Felix Kling (UC, Irvine), Tilman Plehn (U. Heidelberg, ITP)
e-Print: 1612.05261 [hep-ph]
DOI: 10.1103/PhysRevD.95.073002
Published in: Phys.Rev.D 95 (2017) 7, 073002

Natural priors, CMSSM fits and LHC weather forecasts
Ben C. Allanach (Cambridge U., DAMTP), Kyle Cranmer (New York U.), Christopher G. Lester (Cambridge U.), Arne M. Weber (Munich, Max Planck Inst.)
e-Print: 0705.0487 [hep-ph]
DOI: 10.1088/1126-6708/2007/08/023
Published in: JHEP 08 (2007), 023

Maximum significance at the LHC and Higgs decays to muons
Kyle Cranmer (Brookhaven), Tilman Plehn (Munich, Max Planck Inst. and Edinburgh U.)
e-Print: hep-ph/0605268 [hep-ph]
DOI: 10.1140/epjc/s10052-007-0309-4
Published in: Eur.Phys.J.C 51 (2007), 415-420

A Coverage Study of the CMSSM Based on ATLAS Sensitivity Using Fast Neural Networks
Michael Bridges (Cambridge U.), Kyle Cranmer (New York U., CCPP), Farhan Feroz (Cambridge U.), Mike Hobson (Cambridge U.), Roberto Ruiz de Austri (Valencia U., IFIC)
e-Print: 1011.4306 [hep-ph]
DOI: 10.1007/JHEP03(2011)012
Published in: JHEP 03 (2011), 012

Prospects for Higgs searches via VBF at the LHC with the ATLAS detector
K. Cranmer, Y.Q. Fang, B. Mellado, S. Paganis, W. Quayle et al.
e-Print: hep-ph/0401148 [hep-ph]

Neural Network Based Search for Higgs Boson Produced via VBF with $H \to W^+W^- \to l^+ l^-$ {p_{T}^miss} for 115 < M_H < 130~≥v
K. Cranmer, P. McNamara, B. Mellado, Y. Pan, W. Quayle et al.
ATL-PHYS-2003-007, https://inspirehep.net/literature/1195834

High-Energy Physics - Software and Infrastructure

An implementation of neural simulation-based inference for parameter estimation in ATLAS
ATLAS Collaboration • Georges Aad (Marseille, CPPM) et al.
e-Print: 2412.01600 [hep-ex]

MadMiner: Machine learning-based inference for particle physics
Johann Brehmer (New York U., CCPP), Felix Kling (UC, Irvine and SLAC), Irina Espejo (New York U., CCPP), Kyle Cranmer (New York U., CCPP)
e-Print: 1907.10621 [hep-ph]
DOI: 10.1007/s41781-020-0035-2
Published in: Comput.Softw.Big Sci. 4 (2020) 1, 3

RECAST: Extending the Impact of Existing Analyses
Kyle Cranmer (New York U., CCPP), Itay Yavin (New York U., CCPP)
e-Print: 1010.2506 [hep-ex]
DOI: 10.1007/JHEP04(2011)038
Published in: JHEP 04 (2011), 038

The RooStats Project
Lorenzo Moneta (CERN), Kevin Belasco (Princeton U.), Kyle S. Cranmer (New York U.), S. Kreiss (New York U.), Alfio Lazzaro (CERN) et al.
e-Print: 1009.1003 [physics.data-an]
DOI: 10.22323/1.093.0057
Published in: PoS ACAT2010 (2010), 057,

The ATLAS analysis architecture
ATLAS Collaboration • K.S. Cranmer (Brookhaven) for the collaboration.
DOI: 10.1016/j.nuclphysbps.2007.11.096
Published in: Nucl.Phys.B Proc.Suppl. 177-178 (2008), 126-130,

High-Energy Physics - Experiment (selected highlights)

Measurement of off–shell Higgs boson production in the $H^* \to ZZ \to 4\ell$ decay channel using a neural simulation–based inference technique in 13 TeV pp collisions with the ATLAS detector
ATLAS Collaboration • Georges Aad (Marseille, CPPM) et al.
e-Print: 2412.01548 [hep-ex]

Efficient Search for New Physics Using Active Learning in the ATLAS Experiment
ATLAS Computing Activity Collaboration • Zubair Bhatti (New York U.) et al.
DOI: 10.1051/epjconf/202429509013
Published in: EPJ Web Conf. 295 (2024), 09013

Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC
ATLAS Collaboration • Georges Aad (Freiburg U.) et al.
e-Print: 1207.7214 [hep-ex]
DOI: 10.1016/j.physletb.2012.08.020
Published in: Phys.Lett.B 716 (2012), 1-29

Search for High Mass Resonances Decaying to Muon Pairs in $\sqrt{s}$=1.96 TeV $p\bar{p}$ Collisions
CDF Collaboration • T. Aaltonen (Helsinki Inst. of Phys.) et al.
e-Print: 1101.4578 [hep-ex]
DOI: 10.1103/PhysRevLett.106.121801
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