Anastasis Kratsios

McMaster University
Department of Mathematics and Statistics
Hamilton Hall, Hamilton
Canada

Foundations of Geometric Deep Learning

Specialization: *I investigate the analytic and statistical foundations of deep learning. By understanding the behaviour of these models, I can rigorously modify them to efficiently encode the structures arising in the natural and social sciences, esp. stochastic processes, games, and PDEs.*

Primary Areas: Mathematical and statistical foundations of (geometric deep and operator) learning.
Applied Areas: Deep learning for optimal control, game theory, PDEs, and finance.

Employment History

Academic

2022-Current **Assistant Professor - Data Science in Mathematical Finance**, *McMaster University* , Hamilton, Canada
Cross Appointment: Computational Science and Engineering

2023-Current **Faculty Affiliate**, *Vector Institute*, Toronto, Canada

2021-2022 **Postdoctoral Researcher - Geometric Deep Learning**, *University of Basel*, Basel, Switzerland, Groups: Computer Science and Probability

2018-2021 **Postdoctoral Researcher - Stochastic Finance and Geometric Deep Learning**, *ETH Zürich*, Zürich, Switzerland, Group: Mathematical Finance

Private Sector

2017 **Risk Management Researcher**, *CIBC Capital Markets*, Toronto, Canada

Education

2014–2018 **PhD Mathematics (Mathematical Finance and Analysis)**, *Concordia University*, Montreal, Supersivors: Cody Hyndman and Alina Stancu

2012–2014 **MSc Mathematics (Homological Algebra and Non-Commutative Geometry)**, *University of Montreal*, Montreal, Supervisor: Abraham Broer

2009–2012 **BA Mathematics (Pure Mathematics)**, *Concordia University*, Montreal

Grants

2023-2028 **NSERC Discovery Grant**, $\$205,000$ - *Foundations of Geometric Deep Learning and Trustworthy AI in Finance*

2023-2028 **NSERC Early Career Grant**, $\$12,500$

2023 **McMaster Startup Grant**, $\$130,000$

Research Awards and Recognitions

2024 **NeurIPS Spotlight Paper**, *Energy-Guided Continuous Entropic Barycenter Estimation for General Costs*

2022 **ICLR Spotlight Paper**, *Universal Approximation Under Constraints is Possible with Transformers*

Anastasis Kratsios *kratsioa@mcmaster.ca*
https://anastasiskratsios.github.io/

Research Articles (40)

Highlights:

4 **In The Journal of Machine Learning Research (JMLR)**

9 **In NeurIPS, ICLR, ICML, COLT, or TMLR**

17 **Productivity in 2024: New Preprints and Accepted Manuscripts**

Legend:

Each research article will be classified into one of the following topics.

- **Finance**, *5*
- **Control, Games, and Optimization**, *3*
- **Time-Series and Stochastic Processes**, *5*
- **Statistics and Learning Theory**, *7*
- **Deep Learning Theory**, *(Approximation, Interpolation, and Embedding)*, 18
- **Deep Learning in PDEs and Inverse Problems**, *2*
- **Other**, *2*

Publications (24)

Each student or postdoc I mentored is emphasized with an (†) symbol.

2024 **Cheng†, T. S., Lucchi, A., Kratsios, A., and Belius, D.**, *A Comprehensive Analysis on the Learning Curve in Kernel Ridge Regression*, NeurIPS (2024)
H5-index: 337 • Statistics and Learning Theory

2024 **Kolesov, A., Mokrov, P., Udovichenko, I., Gazdieva, M., Pammer, G., A. Kratsios, Korotin, A., and Burnaev, E.**, *Energy-Guided Continuous Entropic Barycenter Estimation for General Costs*, NeurIPS (2024), Award: Spotlight
H5-index: 337 • Deep Learning Theory • Statistics and Learning Theory

2024 **Cheng†, T. S., Lucchi, A., Kratsios, A., and Belius, D.**, *Characterizing overfitting in kernel ridgeless regression through the eigenspectrum*, International Conference on Learning (2024)
H5-index: 304 • Statistics and Learning Theory

2024 **Benitez†, J. A. L., Furuya, T., Faucher, F., Kratsios, A., Tricoche, X., and de Hoop, M. V.**, *Out-of-distributional risk bounds for neural operators with applications to the Helmholtz equation. Journal of Computational Physics, 113168.*
H5-index: 89 • PDEs and Inverse Problems • Statistics and Learning Theory

2024 **Kratsios, A., Hong†, R., and de Ocáriz Borde, H.**, *Capacity bounds for hyperbolic neural network representations of latent tree structures. Neural Networks, 106420.*
H5-index: 95 • Deep Learning Theory

2023 **Kassraie, P., Hou, S., Kratsios, A., Krause, A., and Rothfuss, J.**, *Instance-Dependent Generalization Bounds via Optimal Transport. Journal of Machine Learning Research, 24, 349.*
H5-index: 117 • Statistics and Learning Theory

Anastasis Kratsios ✉ kratsioa@mcmaster.ca
https://anastasiskratsios.github.io/

2023 **Cheng, T. S., Kratsios, A., Lucchi, A., Dokmanic, I., and Belius, D.**, *A theoretical analysis of the test error of finite-rank kernel ridge regression. Advances in Neural Information Processing Systems, 36, 4767-4798.*
H5-index: 337 • Statistics and Learning Theory

2023 **Kratsios, A., Debarnot, V., and Dokmanić I.**, *Small transformers compute universal metric embeddings. Journal of Machine Learning Research, 24(170), 1-48.*
H5-index: 117 • Deep Learning Theory

2023 **Acciaio, B., Kratsios, A., and Pammer, G.**, *Designing universal causal deep learning models: The geometric (hyper) transformer*, *Mathematical Finance - Special Issue on Machine Learning in Finance*
H5-index: 82 • Finance

2023 **Kratsios, A.**, *Universal regular conditional distributions via probabilistic transformers. Constructive Approximation, 57(3), 1145-1212.*
H5-index: 54 • Deep Learning Theory

2023 **Herrera, C., Krach, F., Kratsios, A., Ruyssen, P., and Teichmann, J.**, *Denise: Deep Robust Principal Component Analysis for Positive Semidefinite Matrices. Transactions on Machine Learning Research.*
H5-index: NA • Deep Learning Theory

2022 **Papon†, L., and Kratsios, A.**, *Universal approximation theorems for differentiable geometric deep learning. Journal of Machine Learning Research, 23(196), 1-73.*
H5-index: 117 • Deep Learning Theory

2023 **Hyndman, C., and Kratsios, A.**, *Generative Ornstein-Uhlenbeck Markets via Geometric Deep Learning. In International Conference on Geometric Science of Information (pp. 605-614). Springer Nature Switzerland.*
H5-index: NA • Finance

2022 **Kratsios, A., Zamanlooy†, B., Dokmanic, I., and Liu†, T.**, *Universal approximation under constraints is possible with transformers. In ICLR) International Conference on Learning Representations.*, Award: Spotlight
H5-index: 304 • Deep Learning Theory

2022 **Zamanlooy†, B., and Kratsios, A.**, *Do ReLU Networks Have An Edge When Approximating Compactly-Supported Functions?. Transactions on Machine Learning Research.*
H5-index: NA • Deep Learning Theory

2022 **Zamanlooy†, B., and Kratsios, A.**, *Learning sub-patterns in piecewise continuous functions. Neurocomputing, 480, 192-211.*
H5-index: 136 • Deep Learning Theory

2021 **Hyndman, C., and Kratsios, A.**, *NEU: A meta-algorithm for universal UAP-invariant feature representation. Journal of Machine Learning Research, 22(92), 1-51.*
H5-index: 117 • Deep Learning Theory

2021 **Casgrain, P., and Kratsios, A.**, *Optimizing Optimizers: Regret-optimal gradient descent algorithms. In Conference on Learning Theory (pp. 883-926). PMLR.*
H5-index: 54 • Control, Games, and Optimization

Anastasis Kratsios ✉ kratsioa@mcmaster.ca
https://anastasiskratsios.github.io/

2021 **Kratsios, A.**, *Lower-estimates on the Hochschild (Co)homological dimension of commutative algebras and applications to smooth affine schemes and quasi-free algebras. Mathematics, 9(3), 251.*
H-index: 43 • Other

2021 **Kratsios, A.**, *The universal approximation property: characterization, construction, representation, and existence. Annals of Mathematics and Artificial Intelligence, 89(5), 435-469.*
H-index: 59 • Deep Learning Theory

2020 **Kratsios, A., Bilokopytov, I.**, *Non-Euclidean universal approximation. Advances in Neural Information Processing Systems, 33, 10635-10646.*
H5-index: 337 • Deep Learning Theory

2020 **Kratsios, A., Hyndman, C.**, *Deep arbitrage-free learning in a generalized HJM framework via arbitrage-regularization. Risks, 8(2), 40.*
H-index: 22 • Finance

2020 **Kratsios, A., Hyndman, C., Wang, R.**, *The entropic measure transform. Canadian Journal of Statistics, 48(1), 97-129.*
H-index: 53 • Finance

Under Review (15)

2024 **G. A. Alvarez, I. Ekren, A. Kratsios, X. Yang**, *Neural Operators Can Play Dynamic Stackelberg Games*, ArXiV: 2411.09644
• Control, Games, and Optimization • Deep Learning Theory

2024 **Borde, H., Lukoianov, A., Kratsios, A., Law, M. T., Dong, X., and Bronstein, M.**, *Scalable Message Passing Neural Networks: No Need for Attention in Large Graph Representation Learning, ArXiV: 2408.13885*
• Deep Learning Theory

2024 **Borde, H., Kratsios, A., Law, M. T., Dong, X., and Bronstein, M.**, *Neural Spacetimes for DAG Representation Learning, ArXiV: 2408.13885*
• Deep Learning Theory

2024 **Persiianov, M., Asadulaev, A., Andreev, N., Starodubcev, N., Baranchuk, D., Kratsios, A., Burnaev, E. and Korotin, A.**, *Inverse Entropic Optimal Transport Solves Semi-supervised Learning via Data Likelihood Maximization, ArXiV:2410.02628*
• PDEs and Inverse Problems

2024 **Hong[†], R. and Kratsios, A.**, *Bridging the Gap Between Approximation and Learning via Optimal Approximation by ReLU MLPs of Maximal Regularity, ArXiV: 2409.12335*
• Deep Learning Theory

2024 **Kratsios, A., Sáez de Ocáriz Borde, H., Furuya, T., and Law, M. T.**, *Approximation Rates and VC-Dimension Bounds for (P)ReLU MLP Mixture of Experts. ArXiV: ArXiV-2402.*
• Deep Learning Theory

Anastasis Kratsios ✉ kratsioa@mcmaster.ca
https://anastasiskratsios.github.io/

2024 **Arabpour[†], R., Armstrong, J., Galimberti, L., Kratsios, A., and Livieri, G.**, *Low-dimensional approximations of the conditional law of Volterra processes: a non-positive curvature approach. ArXiV preprint ArXiV:2405.20094.*, Revision - Constructive Approximation

• Time-Series and Causality

2024 **Limmer[†], Y., Kratsios, A., Yang[†], X., Saqur, R., and Horvath, B.**, *Reality Only Happens Once: Single-Path Generalization Bounds for Transformers. ArXiV preprint ArXiV:2405.16563.*

• Time-Series and Causality

2024 **Kratsios, A., Furuya, T., Lara Benitez[†], J.A., Lassas, M., and de Hoop, M.**, *Mixture of Experts Soften the Curse of Dimensionality in Operator Learning. ArXiV preprint ArXiV:2404.09101.*

• Deep Learning Theory

2024 **Kratsios, A., Neuman, A. M., and Pammer, G.**, *Tighter Generalization Bounds on Digital Computers via Discrete Optimal Transport. ArXiV preprint ArXiV:2402.05576*, (Revision Transactions of Information Theory)

• Statistics and Learning Theory

2024 **Saqur, R., Kratsios, A., Krach[†], F., Limmer[†], Y., Tian, J. J., Willes, J., Horvarth, B. and Rudzicz, F. (2024).**, *Filtered not Mixed: Stochastic Filtering-Based Online Gating for Mixture of Large Language Models. ArXiV preprint ArXiV:2406.02969.*

• Control, Games, and Optimization • Finance

2023 **Hovart, B., Kratsios, A., Limmer[†], Y., and Yang[†], X.**, *Deep Kalman Filters Can Filter. ArXiV preprint ArXiV:2310.19603.*

• Time-Series and Causality

2023 **Kratsios, A., Liu, C., Lassas, M., de Hoop, M. V., and Dokmanić, I.**, *An Approximation Theory for Metric Space-Valued Functions With A View Towards Deep Learning. ArXiV preprint ArXiV:2304.12231.*

• Time-Series and Causality

2023 **Yang[†], X., Kratsios, A., Krach, F., Grasselli, M., and Lucchi, A.**, *Regret-Optimal Federated Transfer Learning for Kernel Regression with Applications in American Option Pricing. ArXiV preprint ArXiV:2309.04557.*

• Control, Games, and Optimization • Finance

2022 **Galimberti, L., Kratsios, A., and Livieri, G.**, *Designing universal causal deep learning models: The case of infinite-dimensional dynamical systems from stochastic analysis. ArXiV preprint ArXiV:2210.13300.*

• Time-Series and Causality

Other Publications (1)

2024 **B. Horvath, A. Kratsios, R. Saqur**, *Book Review: Book Deep Learning - Foundations and Concepts of Christopher M. Bishop and Hugh Bishop*, Springer Nature

• Other

Supervision

Anastasis Kratsios *kratsioa@mcmaster.ca*
https://anastasiskratsios.github.io/

Postdoctoral Researcher(s)

2022-2025 **Postdoctoral Researcher - Optimal Control**, *Xuwei Yang*, McMaster University, Learning how to control and filter (Joint: Matheus Grasselli)

PhD Student(s)

2024-2028 **M.Sc. to Ph.D. Math. Candidate**, *Hossein Rouhvarzi*, McMaster University, Intrinsic approximation in stochastic processes and applications to finance.
Officially Transfers to PhD in Summer 2025

2023-2027 **Ph.D. Stats. Candidate - Joint: Paul McNicholas**, *Yicen Li*, McMaster University, Foundation models for deep clustering.

2023-2027 **Ph.D. Math. Candidate**, *Ruiyang Hong*, McMaster University, Neural Extension Theorems - Approximation by data-interpolating MLPs of maximal regularity .

Masters Student(s)

2023-2025 **M.Sc. CSE**, *Reza Arabpour*, McMaster University, Implementations of hypernetworks for learning Stochastic dynamical systems, algorithms for fine-tuning massive language models, and applications to Finance.

2022-2024 **M.Sc. Joint: Giulia Livieri and Luca Galimberti**, *Alessio Spagnoletti (SNS Pisa)*, Enhancing time-series models with neural martingales

Bachelors Student(s)

2024-2025 **Honors Thesis**, *Treavor Tidy*, McMaster University, Connections between proof theory and deep Learning, understanding how machines reason.

2024 **Summer Research Project**, *Kyle Sung - Joint with: Noah Forman*, McMaster University, Studying control of the Lipschitz constant of neural networks under descent algorithms, and its implications for extremal generalization bounds.
Kyle completed a publishable paper (forthcoming).

2023 **Summer Research Project**, *Ruiyang Hong*, McMaster University, Helped me with deriving upper bounds capacity bounds for hyperbolic neural network embeddings and verifying lower bounds for MLP embeddings for latent graph data. The paper was published in the top deep learning journal (Neural Networks).

Teaching Experience (McMaster University Only)

2025 (W) **Computational Finance II**, *MFM 713*, Graduate

2025 (W) **Introduction to Analysis**, *MATH 3IA3*

2024 (F) **Calculus For Science I**, *MATH 1A03-C01*

2024 (F) **Computational Finance I (Lecture)**, *MFM 703*, Graduate

2024 W **Computational Finance II**, *MFM 713*, Graduate

2024 W **Calculus For Science II**, *MATH 1AA3-C01*

2023 F **Calculus For Science I**, *MATH 1A03-C01*

2023 F **Computational Finance**, *MFM 703*, Graduate

2023 W **Calculus For Science II**, *MATH 1AA3-C01*

2022 F **Calculus For Science I**, *MATH 1A03-C01*

Anastasis Kratsios ✉ *kratsioa@mcmaster.ca*
https://anastasiskratsios.github.io/

Invited and Contributed Talks

2025 **TBD: Deep Learning in Finance**, *University of Oxford*
Invited by: Blanka Hovarth

2025 **TBD: Deep Learning in Finance**, *London School of Economics*
Invited by: Giulia Liviery

2024 **Exponential Approximation Rates for Neural Operator Approximations to the Solution Operator of Certain FBSDEs**, *Invitation Carnegie Mellon University (CMU) Probability and Mathematical Finance Seminar*
Invited by: Johaness Wiesel

2024 **Neural Operators Can Play Dynamic Stackelberg Games**, *Modeling, Learning and Understanding: Modern Challenges between Financial Mathematics, Financial Technology and Financial Economics - Banff International Research Station (BIRS)*
Invited by: Antonis Papapantoleon

2024 **Exponential Approximation Rates for Neural Operator Approximations to the Solution Operator of Certain FBSDEs**, *Eastern Conference on Mathematical Finance*
Invited by: Silvana Pesenti

2024 **An Approximation Theory for Metric Space-Valued Functions: From Rough Path Theory to Adapted Optimal Transport**, *12^{th} Bachelier World Congress in Mathematical Finance*, FGV EMAp, Rio de Janeiro

2024 **Neural Operators Can Play Dynamic Stackelberg Games**, *CAIMS Annual Meeting*, Queens University, Kingston

2024 **Byrne Conference on Stochastic Analysis in Finance and Insurance**, *University of Michigan, Ann Arbor*
Invited by: Ibrahim Ekren

2024 **Pathwise Generalization bounds for Transformers**, *CMS Summer Meeting - Session in: Mathematics of Machine Learning*, University of Saskatoon, Saskatoon
Invited by: Simone Brugiapaglia

2024 **An Approximation Theory for Metric Space-Valued Functions With A View Towards Deep Learning**, *DataSig Seminar Series* , University of Oxford, Oxford
Invited by: Terry Lyons

2024 **Universal Geometric Deep Learning via Geometric Attention**, *ml-ds-seminar*, University of Vienna, Vienna
Invited by: Philipp Petersen

2024 **Universal Geometric Deep Learning via Geometric Attention**, *Actuarial Science and Financial Mathematics seminar series* , University of Waterloo, Waterloo
Invited by: Mario Ghossoub

2024 **An Approximation Theory for Metric Space-Valued Functions With A View Towards Deep Learning**, *Applied Mathematics Seminars - Centre de Recherches Mathématiques (CRM)*, McGill University, Montreal
Invited by: Simone Brugiapaglia

Anastasis Kratsios *kratsioa@mcmaster.ca*
https://anastasiskratsios.github.io/

2024 **Some Recent Advances in Geometric Deep Learning in Finance**, *MAFI Seminar*, ETH Zürich, Zürich
Invited by: Josef Teichmann

2023 **An Approximation Theory for Metric Space-Valued Functions With A View Towards Deep Learning**, *GAML - Second Workshop on Geometry and Machine Learning*, Max Plank, Leipzig
Invited by: Anna Wienhard

2023 **Fields-CFI Conference on Recent Advances in Mathematical Finance and Insurance**, *Stable Dimension Reduction and Efficient Conditional Distribution Approximation for Volterra Processes*, Fields, Toronto

2023 **The Transfer Principal: Universal Approximators Between Metric Spaces From Euclidean Universal Approximators**, *Bachelier Colloquium 2023*, Métabief, France

2022 **Measure-Valued Universal Approximation**, *Finance - AI Seminar - CIBC, Risk Management Group*, Toronto, Canada
Invited by: Hany Farag

2022 **Generic Geometric Priors via Probabilistic Transformers**, *Rice University's: MATH+X Symposium*, Conservatorio Castella, Costra Rica
Invited by: Maarten de Hoop

2022 **Causal Universal Approximation - The Power to Approximate Structured Time-Series**, *Information Geometry Seminar*, Stony Brook University, Remote
Invited by: Pawel Polak

2022 **Universal Measure-Valued Neural Networks**, *Quantitative Finance Seminar*, BMO Capital Markets, Model Risk Group, Toronto, Canada

2022 **Embedding Guarantees for Representations by Small Probabilistic Graph Transformers**, *GAML - First Workshop on Geometry and Machine Learning*, Heidelberg Institute for Theoretical Studies, Heidelberg
Invited by: Anna Wienhard

2022 **Regular Conditional Distributions via Probabilistic Transformers**, *Bachelier Colloquium*, Metabief, France

2021 **Universal Approximation with Exact Constraint Satisfaction is Possible with Transformers**, *TU Munich, Munich*, Munich, Germany

2021 **Geometric Deep Learning for High-Dimensional Option Pricing and Constrained Approximation**, *AIMS Lab Seminar*, McMaster University, Hamilton, Canada

2021 **Universal Approximation with Exact Constraint Satisfaction is Possible with Transformers**, *Talks in Financial and Insurance Mathematics*, ETH Zürich
Invited by: Josef Teichmann

2021 **Universal Probability Measure-Valued Deep Neural Networks**, *Probability Days*, University of Mannheim, Remote

2019 **Universal Approximation Theorems**, *Vienna Congress on Mathematical Finance - VCMF 2019*, Vienna, Austria

Anastasis Kratsios ✉ *kratsioa@mcmaster.ca*
https://anastasiskratsios.github.io/

2019 **Arbitrage-Free Regularization**, *10^{th} Freiburg-Wien-Zürich (FWZ) Seminar*, Vienne, Autstria

2019 **Risk-Averse Conditional Expectation and Shortfall-Regression**, *ETH Zürich*, Zürich, Switzerland

2018 **Geometric Learning and Filtering in Finance**, 10^{th} *Bachelier World Congres*, Dublin, Ireland

2018 **Arbitrage-Free Regularization**, 10^{th} *Bachelier World Congres*, Dublin, Ireland

2018 **Arbitrage-Free Regularization**, *5^{th} Workshop on Insurance Mathematics with a Special Session on Big-Data and Machine Learning in Risk Management*, Montreal, Canada

2017 **A Geometric Approach to Arbitrage-Free Modeling, Estimation, and Prediction**, *International Conference on Mathematical Finance*, Waterloo, Canada
Presentation by coauthor.

2017 **Geometric Learning and Non-Euclidean Filtering in Finance**, *Canadian Mathematical Society Winter Meeting*, Waterloo, Canada

2017 **A Geometric Approach to Arbitrage-Free Modeling, Estimation, and Prediction**, *11^{th} Bachelier Colloquium on Mathematical Finance and Stochastic Calculus*, Métabief, France
Presentation by coauthor.

2016 **Manifold Learning Algorithms for Arbitrage-Free Low-Dimensional on-Linear Model Selection**, *Pacific Institute for the Mathematical Sciences (PIMS); High-Frequency Trading Workshop*, Edmonton, Canada

2016 **A Geometric Approach to Arbitrage-Free Modeling, Estimation, and Prediction**, *Canadian Mathematical Society Winter Meeting*, Niagra, Canada
Presentation by coauthor.

2016 **Manifold learning algorithms for arbitrage-free low-dimensional nonlinear model selection**, *AMS - AMS Fall Meeting*, Brunswick, USA

2016 **Arbitrage-Free Regularization for Forward Rates**, *ENCS Data Science Research Centre*, Montreal, Canada

Workshops and Online Seminars

Multi-University Seminars

2024- **(Toronto) Deep Learning Theory Seminar**, *Founder*, Joint: The Vector Institute

Local Seminar Coordination

2022- **PhiMac (Financial Mathematics) Seminar**, *McMaster University*, Hamilton, Canada

2022-2023 **PDE/Analysis Seminar**, *McMaster University*, Hamilton, Canada
Co-organizer - Main: Lia Bronsard

2021-2022 **SADA Lab**, *Universität Basel*, Basel, Switzerland

2018-2021 **Talks in Financial and Insurance Mathematics**, *ETH Zürich*, Zürich, Switzerland

Anastasis Kratsios ✉ *kratsioa@mcmaster.ca*
https://anastasiskratsios.github.io/

University and Department Service

Committees and Organization

2022-2025 **Equity Diversity and Inclusion Committee (Non-Binary Representation)**
2022-2024 **Colloquium Committee**
2022-2025 **Masters in Financial Mathematics (MFM) Co-Coordination and Events**

Committees and Organization

(1) **Ph.D. Student Committees - Mathematics**
(1) **Ph.D. Student Committees - Statistics**
(1) **Ph.D. Student Committees - Computational Science and Engineering**
(1) **MS.c. Student Committees - Mathematics**
(1) **MS.c. Student Committees - Computational Science and Engineering**

Reviewing Activities

(4) **The Journal of Machine Learning Research**
(3) **Neural Networks**
(10+) **Neural Information Processing Systems (NeurIPS)**
(10+) **International Conference on Learning Representations (ICLR)**
(3) **Artificial Intelligence and Statistics (AISTATS)**
(1) **SIAM Journal on Financial Mathematics**
(1) **SIAM Journal on Applied Mathematics**
(1) **Physica D: Nonlinear Phenomena**
(1) **Journal of Optimization Theory and applications**
(1) **Sampling Theory, Signal Processing, and Data Analysis**
(1) **Annals of Mathematics and Artificial Intelligence**

References

Josef Teichmann, *ETH Zürich*, josef.teichmann@math.ethz.ch
Beatrice Acciaio, *ETH Zürich*, beatrice.acciaio@math.ethz.ch
Juan-Pablo Ortega, *NTU*, juan-pablo.ortega@ntu.edu.sg
Maarten do Hoop, *RICE University*, mvd2@rice.edu
Nils Detering, *Universität Düsseldorf:*, Nils.Detering@hhu.de

Languages

Native, *English and French*
Fluent, *Greek*
Pre-Intermediate, *Farsi*
Beginner, *German*

Citizenship: Canadian

Anastasis Kratsios *kratsioa@mcmaster.ca*
https://anastasiskratsios.github.io/