AIFI

ARTIFICIAL INTELLIGENCE
FINANCE INSTITUTE

BOOTCAMP

FEBRUARY 13th – FEBRUARY 24th 2023

ONLINE PROGRAM

ABOUT

The Artificial Intelligence Finance Institute's (AIFI) mission is to be the world's leading educator in the application of artificial intelligence to investment management, capital markets and risk. We offer one of the industry's most comprehensive and in-depth educational programs, geared towards investment professionals seeking to understand and implement cutting edge AI techniques.

Taught by a diverse staff of world leading academics and practitioners, the AIFI courses teach both the theory and practical implementation of artificial intelligence and machine learning tools in investment management. As part of the program, students will learn the mathematical and statistical theories behind modern quantitative artificial intelligence modeling. Our goal is to train investment professionals in how to use the new wave of computer driven tools and techniques that are rapidly transforming investment management, risk management and capital markets.

COURSE LOGISTICS

Online program:
February 13th – February 24th 2023

40 Hours: Lectures + Practice + Speakers

Course Fee: $3,495

SUPER EARLY BIRD DISCOUNT:
30% until 16th December 2022

EARLY BIRD DISCOUNT:
25% until 13th January 2023

EARLY BIRD DISCOUNT:
15% until 3rd February 2023

This course is for

- Quantitative Analysts
- Computer Scientists
- Risk Managers
- Traders
- Investment Managers
- Data scientists

We will give a Python Refresher and Mathematics

Refresher/Primer at the beginning of the course.

THE FACULTY

Miquel Noguer Alonso PhD – *Co-Founder & Chief Executive Officer*

Miquel Noguer i Alonso is a financial markets practitioner with more than 20 years of experience in asset management, he is the Founder of Artificial Intelligence Finance Institute. Head of Development at Global AI and co-Editor of the Journal of Machine Learning in Finance. He serves in the advisory board of Financial Data Professional Institute FDPI and the CFA New York Quant Investing Group.

He worked for UBS AG (Switzerland) as Executive Director. He is member of European Investment Committee for the last 10 years. He worked as a Chief Investment Office and CIO for Andbank from 2000 to 2006. He started his career at KPMG.

He is Visiting Professor at NYU Courant Institute of Mathematical Sciences and the CQF institute. He has been Adjunct Professor at Columbia University teaching Asset Allocation, Big Data in Finance and Fintech. He is also Professor at ESADE teaching Hedge Fund, Big Data in Finance and Fintech. He taught the first Fintech and Big Data course at the London Business School in 2017.

He received an MBA and a Degree in business administration and economics in ESADE in 1993. In 2010 he earned a PhD in quantitative finance with a Summa Cum Laude distinction (UNED – Madrid Spain). He completed a Postdoc in Columbia Business School in 2012. He collaborated with the Mathematics department of Fribourg during his PhD. He also holds the Certified European Financial Analyst (CEFA) 2000. He also holds the ARPM certificate.

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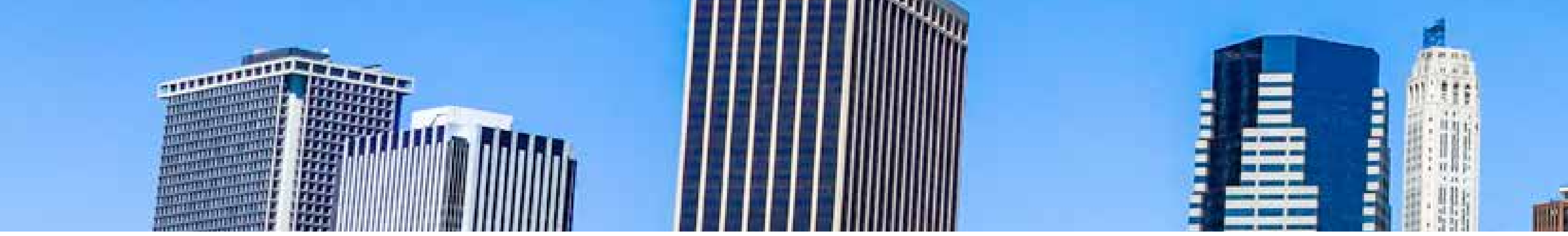
Petter Kolm – *Scientific Advisor & Professor*

Petter Kolm is a Clinical Professor and the Director of the Mathematics in Finance Master's Program at Courant Institute of Mathematical Sciences, NYU. Previously, Petter worked in the Quantitative Strategies Group at Goldman Sachs Asset Management. Petter has coauthored numerous academic articles and four books. He holds a Ph.D. in Mathematics from Yale, an M.Phil. in Applied Mathematics from the Royal Institute of Technology, and an M.S. in Mathematics from ETH Zurich. Petter is also on various Board of Directors, editorial and advisory boards.



Matthew Dixon – *Professor*

Matthew Dixon is a British Applied Mathematician, Assistant Professor of Applied Math at Illinois Tech. He has taught machine learning, computational finance, Bayesian econometrics and financial econometrics, and held visiting research appointments in CS/Math at Stanford University and UC Davis.

Matthew is the co-founder of the Thalesians, a quant educational company which is a member of Level39, Europe's biggest financial technology Incubator. Prior to joining academia, he has held industry appointments as a quant at banks such as Lehman Brothers, the Bank for International Settlements and Barclays Capital. From 2010- 2015, He holds a MSc in Parallel and Scientific Computation (with distinction) from the University of Reading, and a PhD in Applied Math from Imperial College London.

Gordon Ritter – *Scientific Advisor*

Gordon Ritter completed his Ph.D. in mathematical physics at Harvard University in 2007, where he published in top international journals. Prior to that he earned his Bachelor's degree from the University of Chicago. Gordon is currently a senior portfolio manager at GSA. Prior to joining GSA, Gordon was a Vice President of Highbridge Capital Management and a core member of the firm's statistical arbitrage group. Concurrently with his positions in industry, Gordon teaches at three of the nation's leading MFE programs, including Baruch College and NYU. He has published articles, and is a speaker at the top industry conferences.

Stefan Jansen– *Professor*

Stefan is the founder and Lead Data Scientist at Applied AI. He advises Fortune 500 companies, investment firms and startups across industries on data & AI strategy, building data science teams, and developing machine learning solutions. Before his current venture, he was a partner and managing director at an international investment firm where he built the predictive analytics and investment research practice. He also was a senior executive at a global fintech company with operations in 15 markets. Earlier, he advised Central Banks in emerging markets, consulted for the World Bank, and has worked in six languages across Asia, Africa, and Latin America. Stefan holds Master degrees in Computer Science from Georgia Tech and in Economics from Harvard and Free University Berlin and is a CFA Charterholder. He has also been teaching data science at Datacamp and General Assembly.

Tim Leung– *Professor*

Tim Leung is the Boeing Full Professor in the Department of Applied Mathematics and the Director of the Computational Finance & Risk Management (CFRM) program at University of Washington in Seattle. Previously, he was a tenure-track Assistant Professor in the Department of Applied Mathematics & Statistics at Johns Hopkins University and in the Department of Industrial Engineering & Operations Research at Columbia University in New York City. He obtained his BS from Cornell University and PhD from Princeton University. His research in Quantitative Finance has been funded by the National Science Foundation (NSF). He has published over 60 peer-reviewed articles and two books respectively, on the topics of Mean Reversion Trading, and ETFs. Professor Leung served as the Chair for the INFORMS Finance Section and Vice Chair for the SIAM Activity Group on Financial Mathematics & Engineering. He is the founding editor of the book series, Modern Trends in Financial Engineering, and is also on the editorial board of multiple journals, including Applied Mathematical Finance, SIAM Journal on Financial Math, IEEE Intelligent Systems, and Stochastic Models.

BOOTCAMP programme

Day 1	Monday, February 13 2023		
MODULE	**CONTENTS**	**HOUR**	**PROFESSOR**
1	**Artificial Intelligence in Finance**	09.00 am - 12.00 pm EST	Dr. Miquel Noguer
2	**Big Data in Finance Modeling I**		
	a. Modeling		
	b. Modeling Framework		
	c. Quantitative Finance		
3	**Supervised Learning I**		
	a. Supervised Learning Algorithms		
Speaker	**Finance 2023**	12.00 pm - 01.00 pm EST	William Kelly

Day 2	Tuesday, February 14 2023		
MODULE	**CONTENTS**	**HOUR**	**PROFESSOR**
2	**Big Data in Finance Modeling II**	09.00 am - 11.00 am EST	Dr. Daniel T Schmitt
	a. Preprocessing		
	b. Learning and Estimation		
	c. Model Selection		
1	**Python and coding - Primer**	11.00 am - 12.00 pm EST	Nicole Koenigstein
	a. Python basics		
	b. Exercises		
Speaker	**Neural Networks**	12.00 pm - 01.00 pm EST	Petter Kolm

Day 3	Wednesday, February 15 2023		
MODULE	**CONTENTS**	**HOUR**	**PROFESSOR**
Speaker	**Factor Models and Machine Learning**	09.00 am - 10.00 am EST	Tony Guida
3	**Supervised Learning II**	10.00 am - 12.00 pm EST	Yaxoing Zeng
	a. Ensemble models		
	c. Bagging: Random Forests		
	d. Boosting: Adaboost and XGBoost		

Day 4	Thursday, February 16 2023		
MODULE	**CONTENTS**	**HOUR**	**PROFESSOR**
Speaker	**Machine Learning Asset Allocation**	08.00 am - 09.00 am EST	Marcos de Prado
4	**Unsupervised Learning**	09.00 am - 12.00 pm EST	Stefan Jansen
	a Unsupervised Learning Rationale		
	b. Clustering		
	c. Auto-Encoders	12.00 pm - 01.00 pm EST	Nicole Koenigstein
2	**Python and coding - Machine Learning**		
	a. Python Sci kit Learn		
	b. Exercises		

Day 5	Friday, February 17 2023		
MODULE	**CONTENTS**	**HOUR**	**PROFESSOR**
	Deep Learning for Mathematics	08.00 am - 09.00 am EST	François Charton
5	**Deep Learning**	09.00 am - 12.00 pm EST	Stefan Jansen
	a. The mathematics of deep learning		
	I. Mathematical definition		
	II. Optimization		
	III. Drop out		
	b. Neural Networks Architectures		
	I. Feedforward Neural Networks		
	II. Convolutional Neural Networks		

Day 6	Monday, February 20 2023		
MODULE	CONTENTS	HOUR	PROFESSOR
5	**Deep Learning**	09.00 am - 12.00 pm EST	Dr. Matthew Dixon
	b. Neural Networks Architectures		
	II. Recurrent Neural Networks		
	III. Long Short Term Memory Networks		
	IV. Convolutional Neural Networks		
	V. Generative Adversarial Networks		
2	**Python and coding - Machine Learning**	12.00 pm - 01.00 pm EST	Nicole Koenigstein
	Deep Learning		

Day 7	Tuesday, February 21 2023		
MODULE	CONTENTS	HOUR	PROFESSOR
6	**Reinforcement Learning**	09.00 am - 12.00 pm EST	Dr. Matthew Dixon
	a. Reinforcement Learning in Finance		
	b. RL in Dynamic Rep and Hedging		
	c. Markov Decision processes		
	d. Taxonomy of RL		
	e. Tabular Learning and Bellman Equation		

Day 8	Wednesday, February 22 2023		
MODULE	CONTENTS	HOUR	PROFESSOR
6	**Reinforcement Learning**	09.00 am - 11.00 am EST	Dr. Tim Leung
	a. Review		
	b. Experiments		
Speaker	**RL in Finance**	11.00 am - 12.00 pm EST	Gordon Ritter

Day 9	Thursday, February 23 2023		
MODULE	**CONTENTS**	**HOUR**	**PROFESSOR**
7	**Natural Language Processing**	09.00 am - 12.00 pm EST	Dr. Miquel Noguer
	a. NLP Pipeline		
	b. Text Pre-Processing		
	c. Math with words (TF-IDF vectors)		
	d. NLP Deep Learning		
	Climate Risk	12.00 pm - 01.00 pm EST	Robert Litterman

Day 10	Friday, February 24 2023		
MODULE	**CONTENTS**	**HOUR**	**PROFESSOR**
7	**AI in Finance Q&A**	09.00 am - 10.00 am EST	Dr. Miquel Noguer
Speaker	**FinEAS**	10.00 am - 11.00 am EST	Asier Gutierrez
Speaker	**Reinforcement Learning**	11.00 am - 12.00 pm EST	Dr. Igor Halperin

REGISTRATION FORM

Start date: Monday February 13 2023

Regular Course Fee

☐ Full Course Fee $3,495

Super Early Bird Discounts

☐ 30% discount until until 16th December 2022

Early Bird Discounts

☐ 25% discount until 13th January 2023

☐ 15% discount until 3rd February 2023

Discount code

VOLUME DISCOUNT: If 2 or more people from your institution wish to take the course please contact us.

DELEGATE DETAILS
NAME:
ORGANISATION:
JOB TITLE:
DEPARTMENT:
ADDRESS:
ZIPCODE:
TELEPHONE:
E-MAIL:
NATIONALITY:
DATE:
SIGNATURE:

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NOTES

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