

Dhruv Sharma

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Work Experience

- Head of Portfolio Intelligence, *Fabric RQ*** 07/2022-Present
- Lead the development and integration of MSCI Barra Risk Models for Fabric's multi-asset risk analytics platform.
 - Design functional prototypes to validate new models and new customer use cases.
 - Collaborate with the design team to integrate customer feedback and inform product development.
 - Advise research projects for Master of Financial Engineering (MFE) candidates at Haas School of Business, UC Berkeley.
- Model Research Scientist, *Fabric RQ*** 05/2021-06/2022
- Validated use cases for a wealth management firm with 35B\$+ in AUM generating \$200K in revenue and representing 40% of company ARR.
 - Developed a hybrid (Factor and Agent-Based Model) for scenario modeling and market risk.
 - Designed and implemented a machine learning model for automatic attribute asset taxonomies using factor data.
 - Developed a risk allocation framework for custom portfolio construction and rebalancing.

Education

- Ph.D. in Statistical Physics *ENS, Paris and Chair of Econophysics, Ecole Polytechnique*** 09/2017-11/2020
- Advisors: Dr. Francesco Zamponi & Dr. Jean-Philippe Bouchaud.
 - Thesis Title: Macroeconomic Agent-Based Models: A Statistical Physics perspective.
 - Three First Author Publications in peer-reviewed journals.
- Masters in Theoretical Physics, *Ecole Normale Supérieure (ENS), Paris*** 08/2016-06/2017
- Ingénieur Polytechnicien *Ecole Polytechnique, Paris*** 09/2013-06/2017
- Major in theoretical physics.
 - Bourse de la Fondation de l'X, Scholarship to pursue studies at Ecole Polytechnique.
- Bachelor of Science (Honours) Physics. *St. Stephen's College, Delhi*** 07/2010-06/2013
- Top-ranked college in India (Rank 1 in 2013) with an acceptance rate of 1.33%
 - INSPIRE scholarship awarded by the Department of Science and Technology, Govt. of India.

Publications

- Dhruv Sharma, Richard Bookstaber "Portfolio Construction and Rebalancing for Individuals", Investments and Wealth Monitor, March/April 2023. [Link to article](#)
- Richard Bookstaber, [Dhruv Sharma](#) "Managing Material Risk", CFA Research Foundation Briefs. [DOI](#)
- [Dhruv Sharma](#), Jean-Philippe Bouchaud, Stanislao Gualdi, Marco Tarzia, Francesco Zamponi "V -, U -, L - or W-shaped recovery after COVID? Insights from an Agent Based Model", PLoS ONE 16(3): e0247823. [DOI](#), [arxiv](#)

- # Dhruv Sharma, Jean-Philippe Bouchaud, Marco Tarzia, Francesco Zamponi
 “Good speciation and endogenous business cycles in a constraint satisfaction macroeconomic model”, J. Stat. Mech (2021) 063403. [DOI](#), [arxiv](#)
- # Dhruv Sharma, Jean-Philippe Bouchaud, Marco Tarzia, Francesco Zamponi
 “Self-planting: digging holes in rough landscapes”, J. Stat. Mech, (2019) 123301. [DOI](#), [arxiv](#)

Other Experience

Scientific Outreach Specialist , <i>Cité des Sciences de l'Industrie, Paris.</i>	11/2017-08/2020
Graduate Student Representative , <i>Administrative Council, Ecole Normale Supérieure</i>	12/2017-12/2019
Superfluid Light in Hot Atomic Vapor. <i>Ecole Normale Supérieure, Paris.</i>	09/2017- 11/2020
<ul style="list-style-type: none"> # Characterized superfluid flow of light in nearly detuned Rubidium vapor. # Advisor: Dr. Quentin Glorieux, Quantum Optics Team at Laboratoire Kastler Brossel. # Received "Félicitations de Jury" for this work. 	
Software architect and developer, X-CubeSat. <i>Ecole Polytechnique, Palaiseau.</i>	08/2014- 08/2017
<ul style="list-style-type: none"> # Software architect and developer of the Attitude Control and Determination System. # X-CubeSat: one of fifty nanosatellites under the QB50 initiative of the Von Karman Institute. # Satellite launched in May 2017 from the International Space Station. 	

Languages

With humans		With computers	
English	Native	General	Python, C++
French	Fluent	Numerical	NumPy, SciPy, Pandas.