

Fabio Vanni | Curriculum Vitae

residency – Pisa, Italy

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Academics Position

OFCE - Sciences Po

Research Fellow, France

Nice

2019 – present

Modeling and simulations of complex evolving systems through stochastic processes and statistical mechanics. Human mobility flow analysis and spatial interaction patterns and its role in the economy. Financial market models and, ecological networks. Evaluation of the impact of productive activity on the climate change. Statistical analysis and econometric models for economic indicators (beyond-GDP project), environmental footprint of economic activities. Modeling the epidemiological risk in terms of social distancing data and contact tracing.

Scuola Superiore Sant'Anna, Institute of Economics

Collaboration, Italy

Pisa

June 2020– July2020

Evaluation of economic impact of Covid-19 epidemic at national and regional level in Italy for the Minister for Innovation and Technological Digitization. Modeling the epidemiological risk in terms of social distancing data and contact tracing.

Scuola Superiore Sant'Anna, Institute of Economics

Research Fellow, Italy

Pisa

2013–2018

Financial Networks, firm localization models, computational and statistical techniques in econometric. Economics of Social media: information and reputation of firms on line. Geographic allocations of productive spots and exchange of information. Computational modeling and statistical estimations with practical applications to financial markets as well.

University of North Texas, Dept. of Physics

Post.Doc., USA

Texas-USA

2012–2013

Cooperative systems and networks in complex phenomena with computer models. Applications to social sciences and decision making processes.

University of North Texas, Dept. of Physics

Research Assistant, USA

Texas- USA

2009–2012

Research and computational simulations in ordinary and non-ordinary statistical physics and non-linear dynamics.

CNR (National Research Council)

Internship, Italy

Pisa

2002

Independent Component Analysis technique for a Blind Source Separation problem, Signal analysis and Data mining. Analysis of medical data.

Teaching

at Master in Economics and social sciences- SciencesPo campus of Menton - France

Lecturer, Class of Calculus III - Mathematical methods for economics and social sciences

2019-2020

at Master in Economics - University of Pisa

Teaching Assistant, Mathematical methods for economics

2015-2018

at Bachelor in Economics - University of Pisa

Teaching Assistant, Mathematical methods for economics

2016-2018

PhD. course at Scuola Superiore Sant'Anna - Institute of Economics

Teaching Assistant, Mathematics for Social Sciences:Tutorials

2013-2017

at University of North Texas

Teaching Assistant, Astronomy Lab course

2009

Education

University of North Texas

Ph.D. Physics, USA

Dissertation: Criticality in Cooperative Systems (4 GPA)

Dallas

2012

Università degli studi di Pisa

Master Degree in Physics

Dissertation: Long-Range Correlations and renewal events in EEG series

Pisa

2007

Università degli studi di Pisa

Bachelor of Science in Physics

Dissertation: Independent Component analysis for Neuro-Corticals signals

Pisa

2002

Workshop Organization and Scientific editorials

- Workshop co-organizer: DCP'19 Dynamics and Complexity: Climate and socio-economics** *date and location:* CNR Pisa
1-3 July 2019
- Workshop organizer: A unifying approach in the study of complex systems: the role of heterogeneity and the concept of time in models and data.** *date and location:* Scuola Superiore di Sant'Anna
Pisa
13-15 June 2018
- Workshop organizer: Self-organized temporal criticality: sociological, neuro-physiological, economical applications** An interdisciplinary workshop on complex systems *date and location:* Scuola Superiore di Sant'Anna
Pisa
17-19 July 2017
- Referee activities:** Oxford Industrial and Corporate Change, Journal of economic interaction and coordination, EPJ Data Science, EPOL economia politica, Chaos solitons & fractals, Chaos

Peer-Reviewed Publications

- **Fabio Vanni**, David Lambert, Luigi Palatella,
A phenomenological estimate of the true scale of CoViD-19 from primary data
Chaos Solitons & Fractals (2021) 110854 ;
- **Fabio Vanni** and Paolo Barucca
Degree-correlations in a bursting dynamic network model,
Journal of economic interaction and coordination, 1–33 (2018);
- David Lambert and **Fabio Vanni**
Complexity and Heterogeneity in a Dynamic Network
Chaos, Solitons & Fractals, Volume 108, March 2018, Pages 94-103;
- Giulio Bottazzi, Ugo Gragnolati and **Fabio Vanni**
Non-linear externalities in firm localization
Regional Studies 51 (8), 1138-1150 (2017);

- **Fabio Vanni**, Mirko Luković and Paolo Grigolini
Transmission of Information at Criticality
Physica A, 430-438 (2014);
- **Fabio Vanni**, Mirko Luković and Paolo Grigolini
Criticality and transmission of information in a swarm of cooperative units
Phys Rev Lett 107(7):078103 (2011);
- Mauro Bologna, **Fabio Vanni**, Arkadii Krokhnin and Paolo Grigolini,
Memory effects in fractional Brownian motion with Hurst exponent $H < 1/3$
Phys Rev E Stat Nonlin Soft Matter Phys 82(2 Pt 1):020102 (2010);
- Book chapter: Esthétique de la complexité : Pour un cognitivisme non-linéaire: Chapter: Music as a mirror of mind, Editors: HERMANN, ISBN: 978 2 7056 9378 7

Submitted, Pre-print & Working Papers

- S. Reissl, A. Caiani, F. Lamperti, M. Guerini, **F. Vanni**, G. Fagiolo, T. Ferraresi, L. Ghezzi, M. Napoletano, A. Roventini
Assessing the Economic Effects of Lockdowns in Italy: A Dynamic Input-Output Approach LEM Working Paper Series, No. 2021/3 submitted to European Economic Review ;
- T. Ferraresi, L. Ghezzi, **F. Vanni**, M. Guerini, F. Lamperti, G. Fagiolo, A. Caiani, M. Napoletano, A. Roventini
On the economic and health impact of the COVID-19 shock on Italian regions: A value chain approach LEM Working Paper Series, No. 2021/10 , March 2021, submitted to Regional Studies;
- **Fabio Vanni**, David Lambert, Luigi Palatella
Epidemic response to physical distancing policies and their impact on the outbreak risk, arXiv:2007.14620 (2020) - submitted to Scientific Report;
- **F. Vanni**, David Lambert
On the regularity of population mobility at times of a pandemic, arXiv:2104.08975 (April 2021)
- G. Bottazzi, A. De Sanctis and **F. Vanni**,
Non-performing loans, systemic risk and resilience in financial networks,
February 2020, SSRN doi:10.2139/ssrn.3539741, submitted to Journal of Financial Stability ;
- G. Bottazzi, and **F. Vanni**
A numerical estimation method for discrete choice models with non-linear externalities, LEM Sant'Anna, Working paper Series 2014/01;
- T. Ferraresi, L. Ghezzi, **F. Vanni**, M. Guerini, F. Lamperti, G. Fagiolo, A. Caiani, M. Napoletano, A. Roventini
Impatto economico del lockdown: un'analisi settoriale e regionale delle misure di contenimento Minister for Innovation and Technological Digitization , 15 June 2020;
- **F. Vanni**, Mauro Napoletano, Giovanni Dosi and Andrea Roventini,
Endogenous money network model of leveraged institutions, EU-project Dolphins research output ;
- **F. Vanni** , David Lambert *Memory patterns between events at different time-scales: an exchangeability-aging statistical test*. work in progress paper 2019
- **F. Vanni**, M. Napoletano, M. Guerini *technological and environmental impact of productive activities and on network-based indicators of growth* work in progress 2019
- **F. Vanni**, Lambert D. *Time perspective of complex networks and anomalous scaling* work in progress paper 2019
- Lambert D. **Vanni F.** Bologna M. *Temporal complex interacting systems: formalism and developments* work in progress paper 2019

Current and former support

GROWINPRO

EU

current support, project

Scientific Collaborator of the project from the European Union's Horizon 2020 research and innovation programme under grant agreement No.822781 GROWINPRO - Growth Welfare InnovationProductivity. RIAs

DOLFINS

EU

former support, project

Scientific Collaborator of the project from the European Union's Horizon 2020 research and innovation programme H2020-FETPROACT-2014

EcoMeSo

Scuola Sant'Anna

former support, Regione Toscana

"Economia dei Media Sociali: Informazione e Reputazione nella Rete", Sistemi avanzati di accelerazione della conoscenza.

Talks at international conferences and workshops

SafeGraph - Stanford (USA)

SafeGraph/Placekey community, 27 Maggio 2021

Exploring Regular Mobility Patterns During the Pandemic, <https://bit.ly/370t6It>

Bank of England

ABM4Policy Workshop for Agent Based Models, 16-12 December 2020

Agent-based modelling and its policy applications.

CNR Pisa-Italy

Dynamics and Complexity DCP19, 1-3 July 2019

Climate and socio-economics

City University of London

WEHIA 2019 Workshop on Economic Science with Heterogeneous Interacting Agents, 24-26 June 2019

Université Côte d'Azur Nice-France

Complex Days at UCA, 25 March 2019

UZH, Zurich-Switzerland

Second Conference on Financial Networks and Sustainability, 17-19 January 2018

Università Cattolica di Milano

22nd annual Workshop on the Economic Science with Heterogeneous Interacting Agents (WEHIA), 12-14 June 2018

Lyon

The 6th International Conference on Complex Networks and Their Applications, 29 November 01 December 2017

IMT Lucca

International Conference on Synthetic Populations, 22-23 February 2017

University of North Texas

The Network Science of Squads, 01-03 December 2016

Evolutionary Game Theory of Small Groups and their Larger Societies

OFCE-GREDEG-SKEMA Sophia-Antipolis Nice

Workshop on Complex Evolving System Approach in Economics., 01-03 December 2016

Financial networks and systemic risk

Université Paris-Sorbonne, PARIS

Statistical Physics of Financial and Economic Networks - Satellite Meeting to StatPhys26, 15-16 July 2016

Università di Pisa

8th International Conference on Computational and Financial Econometrics (CFE 2014), 6-8 December 2014.

Ceris-CNR Rome

IWcee14 - International Workshop on Computational Economics and Econometrics. , 26-27 of June, 2014 .

The Socio-Economics of Networks: Theory and Applications

Universitas Mercatorum, Roma

The growth of firms and countries: distributional properties and economic determinants, 24-25 October 2013 .

Languages

Italian: *Native*

English: *Fluent* (Toefl Certificate - GRE)

Date:

September 7, 2021

Signature



Le dichiarazioni rese nel presente curriculum sono da ritenersi rilasciate ai sensi degli artt. 46 e 47 del D.P.R. 445/2000