

PASQUALE CAIANIELLO

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General

Born in Napoli, 1960.

Present Position: Senior **Researcher - Assistant Professor**

1993- Assistant Professor, Università dell'Aquila
1996-2002 Assistant Professor, Università di Roma 3
1989. PhD Computer Science New York University
Dissertation in Artificial Intelligence: "*Learning as the Evolution of Representation*"
1987-1989 Research Assistant, Artificial Intelligence New York University, CIMS
1987. Master in Computer Science, New York University
1985-1986 Teaching Assistant, Theory of Computation, New York University
1984-1987 Fellowship "Consiglio Nazionale delle Ricerche"
1983-1984 Fellowship "Istituto Nazionale di Statistica"
1983. "Laurea" in Mathematics, Università di Roma "La Sapienza"
Thesis in Commutative Algebra "*Anelli di Goldman*"

Teaching

2015-2024 *Machine Learning*. DISIM Univaq, undergraduate/graduate *Informatics*
2002-2024 *Artificial Intelligence I*. DISM UnivAq, undergraduate/graduate *Informatics*
2005-2015 *Neural Nets*. DISM UnivAq, undergraduate/graduate *Informatics*
2013-2014 *Operating System Lab*. DISIM UnivAq, undergraduate *Informatics*
1998-2009 *Information Theory*. DSI, UnivAq undergraduate/graduate *Information Science*
1994-2002 *Fondaments of Informatics*. Dept. of Mathematics, UniRoma3 *Mathematics*
1993-2017 *Automated Reasoning, Computational Chemistry, Computational Biology*.
one-year/one-semester courses/modules UnivAq *Chemistry, BioTechnology, Informatics*

Research with the aim to grounding complex and intelligent behaviors on Information Theory

general Artificial Intelligence
Cyber-physical system
Games and strategies
Information theoretic probabilistic classifiers
2000-2019 Bio-Informatics, sequence analytics, haplotyping, associations
Algorithm "MIC": Mutual information clustering
1993-2019 Mutual Information and dependancy. Feature generation, Feature selection
Algorithm "MinSuff": Construction of A Minimal Sufficent Set
Software "Synchron": Data Set Analytics, Features mutual Information
basic "MinSuff" implementation
1986-1995 Language generation, models, structure, coding, sources
Language structure analytics
Information theoretic measures
Learning Theory
Adaptive Heuristics
Software "Alphasets": interpreter for modelling and querying alphabetical sets
"AlephBeta": analytics, structure, generation of languages *Algorithm*

Recent/selected Papers

-Segmentation of Streets and Buildings Using U-Net from Satellite Image.

Subramanian, J., Thangavel, S.K., Caianiello, P. (2022).

In: Peter, J.D., Fernandes, S.L., Alavi, A.H. (eds) Disruptive Technologies for Big Data and Cloud Applications. Lecture Notes in Electrical Engineering, vol 905. Springer, Singapore.

https://doi.org/10.1007/978-981-19-2177-3_80

-Using Deep Learning for Fast Dose Refinement in Proton Therapy M. Spezialetti et al., " 2021 IEEE International Conference on Systems, Man, and Cybernetics (SMC), Melbourne, Australia, 2021, pp. 1783-1789, doi: 10.1109/SMC52423.2021.9658879

- Bioinformatics approach to predict genes for dysregulated microRNAs in hepatocellular carcinoma study on a chemically-induced HCC mouse model. BMC bioinformatics vol. 16 ,2015

The American Journal of Pathology 186 (supplement october 2016)

DOI: 10.1186/s12859-015-0836-1

-Population Dynamics in the Iterated Prisoner Dilemma with Prior Commitment.

Odeh, S; Caianiello, P DOI:10.1109/SNAMS.2019.8931809. pp.262-267. In 2019 Sixth International Conference on Social Networks Analysis, Management and Security (SNAMS) - ISBN:978-1-7281-2947-1

- Feature selection strategies for http botnet traffic detection.-2019. Letteri, I.; Della Penna, G.; Caianiello, P.; DOI:10.1109/EuroSPW.2019.00029. pp.202-210. In Proceedings - 4th IEEE European Symposium on Security and Privacy Workshops, EUROS and PW 2019 - ISBN:978-1-7281-3026-2

- Performance of Botnet detection by neural networks in software-defined networks.

Letteri, Ivan; Del Rosso, Massimo; Caianiello, Pasquale; Cassioli, Dajana In CEUR Workshop Proceedings - Italian Conference on Cybersecurity (ITA-SEC 2018). In CEUR WORKSHOP PROCEEDINGS - ISSN:1613-0073 vol. 2058

- FRIENDLY & KIND with your health: Human-friendly knowledge-intensive dynamic systems for the health domain. PAAMS 2016 Proceedings, vol. 616 of Communications in Computer and Information Science, Springer 2016. 978-3-319-39386-5 DOI: 10.1007/978-3-319-39387-2_2

- Performance of Botnet Detection by Neural Networks in Software-Defined Networks. ITASEC 2018

DOI: 10.1007/978-3-030-01689-0_4- *Application of Hybrid Agents to Smart Energy Management of a*

Prosumer Node. IJIMAI 2(4) 2013 DOI: 10.9781/ijimai.2013.247

-The Territorial Perception in Cooperative Harvesting Without Communication, AISC, volume

473. Trends in Practical Applications of Scalable Multi-Agent Systems ISBN 2016 978-3-319-40158-4 DOI:

10.1007/978-3-319-40159-1_16

*-Cooperating with Trusted Parties Would make life easier, AI*IA 2015. LNCS, vol. 9336 doi: 10.1007/978-3-319-24309-2_10*

- A Case Study on Goal Oriented Obstacle Avoidance, WOA 2015, CEUR Proc. ISSN 1613-0073

- Customer Return Detection with Feature Selection, Design and Diagnostics of Electronic Circuits & Systems, 17th IEEE International Symposium 2014 ISSN 978-1-4799-4558-0/14

- Concept Learning by a Monte Carlo Tree Search of Argumentations, 21st RCRA International Workshop on "Experimental Evaluation of Algorithms for solving problems with combinatorial explosion" 2014