Bardh Prenkaj

Curriculum Vitæ

Academic Curriculum Vitae

PART 1 - General Information

Full name Bardh Prenkaj

Short Bio: He completed his PhD in February 2022 at Sapienza University of Rome in time-series analysis and anomaly detection. From 2019 onward, he has been a Researcher with the Intelligent Information Mining group, a joint research group between the Computer Science Departments of Sapienza University of Rome and Unitelma Sapienza. He conducted his visiting period (March - December 2020) online as a researcher at the George Mason University under the tutorship of prof. Carlotta Domeniconi in anomaly detection in time agnostic real-world data.
His research interests are across three areas: Anomaly Detection (AD), Educational Data Mining (EDM), and Time Series Prediction (TSP). More in detail, his studies include investigations on Student Dropout Prediction, Anomaly Detection on Symbolic Behavioural Patterns, Drift Anomaly Detection. He is the author of 12 refereed conference papers and x refereed journal articles. He also co-authored the tutorial "Challenges and Solutions to the Student Dropout Prediction Problem in Online Courses" held within the top rated conference CIKM. He also contributed in the Regional project - Avviso Pubblico "Emergenza Coronavirus e oltre" - Domanda prot. n. A0376-2020-070051, CUP: F84E21000000006, by conducting cutting-edge research in out-of-routine behaviour in e-health symbolic time-related information.

PART 2 - Education

Feb. 2022	PhD in Computer Science, Sapienza University of Rome.
Oct. 2018	MS in Computer Science, Sapienza University of Rome.
Dec. 2016	BS in Computer Science, Sapienza University of Rome.

Research fellowships and PhD

- 01/12/2021 - 01/05/2022
  POSITION: Research fellow, under the supervision of Prof. Paola Velardi
  INSTITUTION: Computer Science Dpt, Sapienza University of Rome, Italy
  AREA: E-Health Analytics, Drift Anomaly Detection.
- 01/11/2018 - 22/02/2022
  POSITION: PhD student under the supervision of Professors: Paola Velardi, Damiano Distante, Giovanni Stilo, Stefano Faralli
  INSTITUTION: Computer Science Dpt, Sapienza University of Rome, Italy
  AREA: Educational Data Mining, Anomaly Detection, Learning Analytics.
- 01/07/2017 - 31/10/2018
  POSITION: Research fellow under the supervision of Professors: Paola Velardi and Giovanni Stilo
  INSTITUTION: Computer Science Dpt, Sapienza University of Rome, Italy
  AREA: Web and Social Information Retrieval, Information Mining, Information Dissemination, Trend Analysis, Machine Learning.

Other Collaboration Activities

- 12/2021 - 06/2022
  Company: Pricewaterhouse Coopers (PwC) in Rome, Italy
  COLLABORATION: software design and development, data integration, database management, algorithmic optimisation.
- 09/2020 - 03/2021
  Company: E Software Solutions in Rome, Italy
  COLLABORATION: software design and development for electric vehicle leasing systems.

Teaching
2017 - 2019:

- *Web and Social Information Extraction* (16h, Laboratory classes), M.Sc. in Computer Science, Faculty of Information Engineering, Informatics and Statistics, Sapienza University of Rome, Italy.
- *Social and Behavioural Networks* (16h, Laboratory classes), M.Sc. in Data Science, Faculty of Information Engineering, Informatics and Statistics, Sapienza University of Rome, Italy.

PART 5 - Research Groups Memberships

Nov. 2018 - ongoing
Group: Intelligent Information Mining (headed by Prof. Paola Velardi "Sapienza University of Rome" and Prof. Damiano Distante "University of Rome Unitelma Sapienza") `http://iim.di.uniroma1.it/`
Description: The group is characterised by state-of-the-art research outcomes in the field of: E-Learning and Educational Data Mining, Semantics Technology, E-Health and Network medicine, Social Media Analysis and Recommender Systems, Human-Computer Interaction and Web Engineering, Machine Learning and Data Mining. The group activities include also: i) research funding; ii) students mentoring; iii) PhD student mentoring.

PART 6.2 - Reviewer for international Journals

Regularly invited to serve as a reviewer of well-established international journals. List of journals:

TKDD	Transactions on Knowledge Discovery from Data
AAI	Applied Artificial Intelligence

PART 8 - Publications

PART 8.1 -Publication Summary

At present date (26/05/2022), according to Scopus `https://www.scopus.com/authid/detail.uri?authorId=57200393698` H-index is 3, number of documents 9, number of citations is 34 (by 32 documents), number of co-authors is 15. Average number of citations is 3.78, total IF and Average IF are 20.48 and 5.12 (4 journal papers, source Scimago/Thomson Reuters 2 years IF).

At present date (26/05/2022), according to Google Scholar, `https://scholar.google.com/citations?user=ORwkZEOAAAAJ` H-index is 4 and i10-index is 2, number of citations is 61.

At present date (26/05/2022) he is author of the following publications:

- 5 papers on refereed conference proceedings, among which:
  - 3 of rating A (PAKDD, CIKM) according to CORE `https://www.core.edu.au`
  - 2 of rating B (Proc. ACM Symp. on Applied Computing, Int. Conf. on Image Analysis and Processing) according to CORE
- 4 articles on refereed journals, among which:
  - 2 of class A* or A according to CORE (ACM Comput. Surv, and Future Generation Computer Systems);
  - 1 of class B according to CORE (Multimedia Tools and Applications)
  - 1 of class Q1 according to Scimago `https://www.scimagojr.com/`

PART 8.2 - Refereed Journals:

1. Bardh Prenkaj, Damiano Distante, Stefano Faralli, Paola Velardi. 2021. Hidden space deep sequential risk prediction on student trajectories, Future Generation Computer Systems, Volume 125, 2021, Pages 532-543, ISSN 0167-739X, DOI: https://doi.org/10.1016/j.future.2021.07.002. [**Ranked A by Core, Ranked Q1 by Scimago] - 3 citations**
2. Bardh Prenkaj, Paola Velardi, Giovanni Stilo, Damiano Distante, and Stefano Faralli. 2020. A Survey of Machine Learning Approaches for Student Dropout Prediction in Online Courses. ACM Computing Surveys 53, 3, Article 57 (June 2020), 34 pages. DOI: https://doi.org/10.1145/3388792. [**Ranked A* by Core, Ranked Q1 by Scimago] - 28 citations**
3. Andrea Coletta, Maria De Marsico, Emanuele Panizzi, Bardh Prenkaj, and Domenicomichele Silvestri. MIMOSE: multimodal interaction for music orchestration sheet editors. Multimedia Tools and Applications 78, no. 23 (2019): 33041-33068. DOI: https://doi.org/10.1007/s11042-019-07838-0 [**Ranked B by Core, Ranked Q2 by Scimago] - 1 citation**
4. Maria De Marsico, Eugenio Nemmi, Bardh Prenkaj, and Gabriele Saturni. "House in the (biometric) cloud: a possible application." IEEE Cloud Computing 5, no. 4 (2018): 58-69. DOI: http://dx.doi.org/10.1109/MCC.2018.043221015. [**Ranked n/a by Core, Ranked Q1 by Scimago] - 1 citation**

PART 8.3 - Refereed Conferences:

1. Dario Aragona, Luca Podo, Bardh Prenkaj, and Paola Velardi. CoRoNNa: a deep sequential framework to predict epidemic spread. In Proceedings of the 36th Annual ACM Symposium on Applied Computing, pp. 10-17. 2021. DOI: https://doi.org/10.1145/3412841.3441883. [**Ranked B by Core, Ranked n/a by GGS**]
2. Hamed Sarvari, Carlotta Domeniconi, Bardh Prenkaj, and Giovanni Stilo. Unsupervised boosting-based autoencoder ensembles for outlier detection. In Pacific-Asia Conference on Knowledge Discovery and Data Mining, pp. 91-103. Springer, Cham, 2021. DOI: https://doi.org/10.1007/978-3-030-75762-5_8. [**Ranked A by Core, Ranked n/a by GGS] - 10 citations**
3. Bardh Prenkaj, Giovanni Stilo, and Lorenzo Madeddu. Challenges and solutions to the student dropout prediction problem in online courses. In Proceedings of the 29th ACM International Conference on Information & Knowledge Management, pp. 3513-3514. 2020.
DOI: https://doi.org/10.1145/3340531.3412172. [**Ranked A by Core, Ranked A+ by GGS] - 9 citations**
4. Bardh Prenkaj, Paola Velardi, Damiano Distante, and Stefano Faralli. 2020. A Reproducibility Study of Deep and Surface Machine Learning Methods for Human-related Trajectory Prediction. In Proceedings of the 29th ACM International Conference on Information & Knowledge Management (CIKM '20). Association for Computing Machinery, New York, NY, USA, 2169–2172.
DOI: https://doi.org/10.1145/3340531.3412088. [**Ranked A by Core, Ranked A+ by GGS] - 6 citations**
5. Maria De Marsico, Eugenio Nemmi, Bardh Prenkaj, and Gabriele Saturni. A smart peephole on the cloud. In International Conference on Image Analysis and Processing, pp. 364-374. Springer, Cham, 2017. DOI: https://doi.org/10.1007/978-3-319-70742-6_34. [**Ranked B by Core (2017), Ranked n/a by GGS] - 3 citations**

PART 9 - Other activities

PART 9.1 - Visiting researcher (online)
Date: 01/03/2020 - 31/12/2020
Location: College of Engineering and Computing, George Mason University, Fairfax (VA), USA
Local Research Supervision: Prof. Carlotta Domeniconi
Research topic: Data mining on real-world time-agnostic information and boosting-based models for anomaly detection.
Papers published:

- Hamed Sarvari, Carlotta Domeniconi, Bardh Prenkaj, and Giovanni Stilo. Unsupervised boosting-based autoencoder ensembles for outlier detection. In Pacific-Asia Conference on Knowledge Discovery and Data Mining, pp. 91-103. Springer, Cham, 2021.

PART 9.2 - Research assistant

- Date: 01/03/2018 - 01/09/2018
  Location: Department of Computer Science, Sapienza University of Rome, Rome, Italy
  Local Research Supervision: Prof. Paola Velardi
  Research topic: Web crawling and scraping, information dissemination and clustering on multi-layered networks of scientific publications and citations.
  Thesis completed:
  - Time-aware Topic Detection and Anomaly Classification in a Multi-layer Network. Co-tutor: Prof. Giovanni Stilo
- Date: 01/05/2017 - 01/10/2017, 01/11/2018 - 01/02/2019
  Location: Department of Computer Science, Sapienza University of Rome, Rome, Italy
  Local Research Supervision: Prof. Maria De Marsico and Prof. Emanuele Panizzi
  Research topic: Multimodal Human Computer Interaction (HCI), and biometric systems in terms of Software-as-a-Service (SaaS).
  Papers published:
  - Andrea Coletta, Maria De Marsico, Emanuele Panizzi, Bardh Prenkaj, and Domenicomichele Silvestri. MIMOSE: multimodal interaction for music orchestration sheet editors. Multimedia Tools and Applications 78, no. 23 (2019): 33041-33068.
  - Maria De Marsico, Eugenio Nemmi, Bardh Prenkaj, and Gabriele Saturni. "House in the (biometric) cloud: a possible application." IEEE Cloud Computing 5, no. 4 (2018): 58-69.
  - Maria De Marsico, Eugenio Nemmi, Bardh Prenkaj, and Gabriele Saturni. A smart peephole on the cloud. In International Conference on Image Analysis and Processing, pp. 364-374. Springer, Cham, 2017.

PART 9.3 - Speaker at international conferences and events

- 10/02/2022, *Ital-IA 2022: Ambient Assisted Living and Sensor-based Monitoring of the Elderly*, Turin, Italy (online).
- 22-26/03/2021, (paper presenter) *CoRoNNa: a deep sequential framework to predict epidemic spread*, The 36th ACM/SIGAPP Symposium On Applied Computing, Seoul, South Korea (online).
- 19-23/10/2020 (short paper presenter) *A Reproducibility Study of Deep and Surface Machine Learning Methods for Human-related Trajectory Prediction*, 29th ACM International Conference on Information & Knowledge Management (CIKM 2020), Galway, Ireland (online).
- 19-23/10/2020 (half-day tutorial presenter) *Challenges and solutions to the student dropout prediction problem in online courses*, 29th ACM International Conference on Information & Knowledge Management (CIKM 2020), Galway, Ireland (online).
- 22/02/2019 (poster presenter) *OpenDI 2019: Hierarchical Neural Network for the Study of Student Dropouts*, Rome, Italy.
- 11-15/09/2017 (paper presenter) *A smart peephole on the cloud*, 19th International Conference on Image Analysis and Processing, Catania, Italy.

PART 9.4 - Thesis Mentoring

Dario Aragona (late 2021)
Semi-supervised Anomaly Detection on Elderly Behaviour Time Series
M.Sc. in Computer Science,
Department of Computer Science,

Sapienza University of Rome,
Topics: deep learning, anomaly detection, semi-supervised learning, e-health data mining
Co-advised with Prof. Paola Velardi

Luca Podo (late 2021)
Machine Learning applied to the Visual Analytics of health conditions in older people
M.Sc. in Computer Science,
Department of Computer Science,
Sapienza University of Rome,
Topics: visual analytics, ML4Vis, deep learning, e-health data mining
Assistance to Prof. Paola Velardi

Gianmarco Forcella (late 2018)
DataEX: A Distributed Micro Service Architecture to support Data Analytics in the eLearning sector
M.Sc. in Computer Science,
Department of Computer Science,
Sapienza University of Rome,
Topics: deep learning, student dropout prediction, educational data mining
Assitance to Prof. Paola Velardi

Emanuele Alessi (late 2018)
Student Dropout Prediction through Attention Networks with an application to Unitelma Sapienza
M.Sc. in Computer Science,
Department of Computer Science,
Sapienza University of Rome,
Topics: deep learning, student dropout prediction, educational data mining
Assitance to Prof. Paola Velardi