



Umberto Ferraro Petrillo

Curriculum Vitae et Studiorum

Current Position

- Jun. 2022 – **National Scientific Qualification as Full Professor in Computer Science.**
Mar. 2019 – **Associate Professor**, *Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza, Rome.*

Education

- Oct. 2016 – **Visiting Scholar**, *School of Interactive Computing, Georgia Tech Institute (host: Concetta Guerra), Atlanta, US.*
Feb. 2017
Sept. 2008 **Summer School on Graph Theory, Algorithms and Applications International School of Mathematics**, *Erice.*
Jan. 2005 – **Postdoctoral Fellowship**, *Dipartimento di Statistica, Probabilità e Statistiche Applicate, Università degli studi di Roma - La Sapienza, Rome.*
Oct. 2006
Sept. 2002 – **Postdoctoral Fellowship**, *Dipartimento di Informatica ed Applicazioni, Università degli studi di Salerno, Salerno.*
Aug. 2004
Sept. 2001 **International Summer School on Algorithm Engineering**, *Rome.*
May – June 2000 **National PhD School on Computer Science**, *Bertinoro.*
1997–2001 **PhD in Computer Science**, *Università degli studi di Salerno, Salerno, Thesis title: Algorithm Engineering: Methodologies and Support Tools .*
Supervisors: Giuseppe Cattaneo, Giuseppe F. Italiano
1992–1997 **Degree in Computer Science**, *Università degli studi di Salerno, Salerno, Thesis title: Spark, a Novel Model for the Algorithm Animation over the Internet.*
Final Grade:110/110 *summa cum laude*

Duty Appointments

- Jan. 2022 – **RTDA Supervisor**, *Subject: Giorgio Grani. PON Ricerca e Innovazione su Tematiche Green., Dipartimento di Scienze Statistiche.*
Nov 2022 – **PhD Student Supervisor**, *Subject: Lorenzo Di Rocco. PhD school on Statistical Sciences., Dipartimento di Scienze Statistiche.*
Mar. 2021 – **Research Fellowship Supervisor**, *Author: Lorenzo Di Rocco. Research Title: Sviluppo e sperimentazione di algoritmi distribuiti per l'analisi di PPI Networks., Dipartimento di Scienze Statistiche.*
Oct. 2021

- Oct. 2019 – **Research Fellowship Supervisor**, Author: *Francesco Palini*. Research Title: *Sviluppo, implementazione e sperimentazione di algoritmi distribuiti per l'analisi comparativa di sequenze genomiche.*, Dipartimento di Scienze Statistiche.
- Apr. 2019 – **Committee Member for the final examination for the PhD in Computer Science and Information Engineering (XXXI cycle)**, Università degli studi di Salerno , Salerno.
- Dec. 2017 – **Member of Commissione di Ateneo per il riconoscimento dei 24 CFU**, Università degli studi di Roma-La Sapienza , Rome.
- Jan. 2017 – **Research Fellowship Supervisor**, Author: *Mara Sorella*. Research Title: *Modeling and Mining Dynamic Processes on Social and Information Networks.*, Dipartimento di Scienze Statistiche.
- Dec. 2013 – **Member of Giunta di Facoltà**, Facoltà di Informatica, Ingegneria Informatica e Statistica, Jan. 2017 Università degli studi di Roma - La Sapienza, Rome.
- Dec. 2013 – **Member of Commissione Progettazione iniziative di ricerca multidisciplinari'**, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza, Rome.
- Jun. 2012 – **Committee Member for the final examination for the PhD in Computer Science and Automation Engineering (XXVIV cycle)**, Università degli studi di Roma - Tor Vergata, Rome.
- Mar. 2012 – **Committee Member for the final examination for the PhD in Computer Science (X cycle)**, Università degli studi di Salerno , Salerno.
- Jan. 2011 – **Head of the 'Ricerca' working group for surveying and summarizing the main research activities carried out in the Department**, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza, Rome.
- Jan. 2011 – **Member of Commissione servizi ICT**, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza, Rome.
- 2010 – 2013 **Member of Giunta di Dipartimento**, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza, Rome.
- 2008 – 2009 **Member of Commissione Informatica**, Ateneo Federato della Scienza e della Tecnologia, Università degli studi di Roma - La Sapienza, Rome.
- Mar. 2008 – **Committee Member for the final examination for the PhD in Computer Science (VII cycle)**, Università degli studi di Salerno , Salerno.

Other Appointments (latest)

- Spring 2020 – **Principal investigator**, development of the industrial research project on the usage of Big Data software services for decision support in precision medicine (protocol number: 2020 RIS- 1001-8225), undersigned by the Dipartimento di Scienze Statistiche in partnership with Kazaam Lab srl, financed by the European Institute for Innovation and Technology - EU, with a total amount of 75.000 euros, in the framework of the RIS Innostars Innovation Awards, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza, Rome.
- Spring 2021
- Summer 2019 – **Principal Investigator**, Sapienza Research Infrastructure project TeraStat2: infrastruttura di supercalcolo ad alta densità per la risoluzione di problemi data-centric di elevata complessità. Value: 55000 euros., Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza. Rome
- Mar. 2018 – **Scientific supervisor**, framework cooperation agreement undersigned with Jakin srl, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza. Rome
- Mar. 2019

- May. 2018 – **Member of the working group**, *development of the contract Forecasting Real Estate Value undersigned with Yard Credit & Asset Management S.r.l.*, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza.
Rome
- Jun. 2014 – **Member of the working group**, *development of the contract "Analisi data crossing delle applicazioni CrewTablet e piattaforme correlate" undersigned with Société Internationale de Télécommunications Aéronautiques S.c.*, Dipartimento di Scienze Statistiche, Università degli studi di Roma - La Sapienza.
Rome

Professional Experience

- May 2002 – **Research Grant**, *Dipartimento di Informatica, Sistemi e Produzione - Università di Roma - Tor Vergata, Rome.*
Aug. 2002
Design of a distributed software architecture for planning and managing the transportation of hazardous materials.
- Jan. 2002 – **Research Grant**, *Istituto di Tecnologie Industriali ed Automazione, Rome.*
Apr. 2002
Design and development of a distributed architecture for the implementation of an extended factory.

Memberships

- Italian CINI National Laboratory on HPC: Key Technologies and Tools
- Italian Informatics Society (GRIN)
- Research Center of Cyber Intelligence and Information Security, Università di Roma - La Sapienza

Teaching Experience

- 2008 – present **Assistant Professor**, *Dipartimento di Scienze Statistiche - Università di Roma - La Sapienza*, Rome.
- *Basi Dati*, Corso di Laurea in Scienze Statistiche (Fall '20, Fall '21, Fall '22)
 - *Gestione ed Elaborazione di Big Data*, Corso di Laurea Magistrale in Scienze Statistiche e Decisionali (Spring '19, Spring '20, Fall '21, Fall '22)
 - *Gestione di Big Data*, Corso di Laurea Magistrale in Scienze Statistiche e Decisionali (Spring '16, Spring '17, Spring '18, Spring '19, Spring '20)
 - *Big Data Analytics*, Corso di Laurea Magistrale in Scienze Statistiche e Decisionali (Spring '17, Spring '18, Spring '19, Spring '20, Spring '21, Spring '22)
 - *Data Management*, Master di II livello in Data Intelligence per le Strategie Decisionali (Spring '16)
 - *Big Data Management*, Master di II livello in Data Intelligence per le Strategie Decisionali (Spring '16)
 - *Applicazioni Web per Basi Dati*, Corso di Laurea Magistrale in Scienze Statistiche e Decisionali (Spring '12, Spring '13, Spring '14, Spring '15)
 - *Basi Dati*, Corso di Laurea in Statistica e Tecnologie Informatiche (Spring '08, Spring '09, Spring '10)
 - *Gestione ed Interrogazione di Big Data*, Master di II livello in Data Intelligence per le Strategie Decisionali (Spring '15)
 - *Gestione Dati e Database*, Master di II livello in Data Intelligence per le Strategie Decisionali (Spring '11, Spring '12, Spring '13, Spring '14)
 - *Laboratorio di Sistemi Informativi*, Master di I livello in Statistica per la Gestione dei Sistemi Informativi (Spring '08, Spring '09)
 - *Basi Dati*, Master di II livello in Data Intelligence per le Strategie Decisionali (Spring '08, Spring '10)
- 2005 – 2006 **Adjunct Professor**, *Dipartimento di Informatica, Sistemi e Produzione - Università di Roma - Tor Vergata*, Rome.
- *Laboratorio di Informatica*, Corso di Laurea online in Ingegneria Informatica (Fall '05)
- 2004 – 2007 **Adjunct Instructor**, *Dipartimento di Statistica, Probabilità e Statistiche Applicate - Università di Roma - La Sapienza*, Rome.
- *Basi Dati*, Corso di Laurea in Statistica e Tecnologie Informatiche (Spring '05, Spring '06, Spring '07)
- 2002 – 2003 **Adjunct Instructor**, *Dipartimento di Informatica ed Applicazioni - Università degli studi di Salerno*, Salerno.
- *Laboratorio di Informatica di Base II*, Corso di Laurea in Informatica (Spring '03)
 - *Linguaggi di Programmazione II*, Corso di Laurea in Informatica (Spring '03)
- 2002 – 2003 **Adjunct Professor**, *Dipartimento di Informatica, Sistemi e Produzione - Università di Roma - Tor Vergata*, Rome.
- *Sistemi e Tecnologie Informatiche*, Corso di Laurea in Ingegneria Gestionale (Fall '03)

Publications

For an updated list of my publications see my public profile on: Google Scholar, Scopus

Reviewing Activity

- Applied Soft Computing (ASC)
- Bioinformatics
- BMC Bioinformatics
- Computing and Informatics (CAI)
- European Symposium on Research in Computer Security (ESORICS)
- IEEE Transactions on Dependable and Secure Computing (TDSC)

- International Symposium on Cluster, Cloud and Internet Computing (CCGRID 2022)
- International Conference on Algorithms and Complexity (CIAC)
- International Conference on Applied Cryptography and Network Security (ACNS)
- International Conference on Information Security and Cryptology (INSCRYPT)
- International Conference on Information Theoretic Security (ICITS)
- International Journal of Distributed Sensor Networks (IJDSN)
- International Journal of Web and Grid Services (IJWGS)
- International Workshop on Information Security Applications (WISA)
- Journal of Ambient Intelligence and Humanized Computing (JAIHC)
- Journal of High Performance Computing and Networking (JHPCN)
- Journal of Statistical Computation and Simulation (JSCS)
- Journal of High Speed Networks (JHSN)
- GigaScience
- Pattern Recognition Letters
- Security and Communication Networks (SCN)
- Software Practice & Experience (SPE)
- Symposium on Discrete Algorithms (SODA)
- Superecomputing (SC)
- Telecommunication Systems (TS)
- Transactions on Internet Technology (TIT)

International Conferences Presentations

- *Using Software Visualization for Supporting the Teaching of MapReduce*. 44th IEEE International Conference on Network and System Security (NSS). Honk Kong (China), 2018
- *Alignment-Free Sequence Comparison over Hadoop for Computational Biology*. 12th IEEE International Conference on Parallel Processing Workshops (ICPPW). Beijing (China), 2015
- *A Framework for the Efficient Collection of Big Data from Online Social Networks*. 2014 International Conference on Intelligent Networking and Collaborative Systems (INCoS). Salerno (Italy), 2014
- *SAVI: a new system for advanced SQL visualization*. 12th ACM Conference on Information Technology Education. West Point, New York (USA), 2011
- *DISCERN: A collaborative visualization system for learning cryptographic protocols*. 5th IEEE Conference on Collaborative Computing, Networking, Applications and Worksharing. Washington D.C. (USA), 2009
- *Secure Personal End-to-End Communication for Handhelds*. 2006 ISSE Securing Electronic Business Processes. Rome (Italy), 2006
- *JIVE: Java Interactive Software-Visualization Environment*. IEEE 2004 Symposium on Visual Languages and Human-Centric Computing. Rome (Italy), 2004
- *Providing Privacy for Web Services by Anonymous Group Identification*. IEEE International Conference on Web Services. San Diego, California (USA), 2004
- *A Lightweight Security Model for WBEM*. Workshop on Reliable and Secure Middleware. Catania (Italy), 2003
- *JPDC: Java Package for Distributed Computing*. IEEE SoftCOM 2003. Split (Croatia), 2003

- *An integration framework for Decision Support Systems*. 15th International Conference on Electronic Commerce and Research. Montreal (Canada), 2002
- *JSEB Java Scalable sErvice Builder: a tool for building scalable services*. IEEE 2001 Symposium on Computers and Communication. Hammamet (Tunisia), 2001

Awards

- Google academic research grant awarded by Google Project title: Development of a general framework for developing and experimenting with alignment-free sequence comparison algorithms Value: 5000USD. Fall 2019.
- NVidia GPU research grant awarded by NVidia Inc. Project title: GPU-based Alignment-free Algorithms. Value: 1500USD. Summer 2018.
- Azure USD research grant awarded by Microsoft Research. Project title: Public Health: Distributed K-mers Counting. Value: 5000USD. Summer 2016.
- Best Paper. 9th International Symposium on Experimental Algorithms. 2010.
- Best Paper. 14th Annual European Symposium on Algorithms. 2006.
- Best Poster. 10th International World Wide Web Conference. 2001.

Organizing Chair / Program Committee Member

- 23rd IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID 2023), Bangalore (India), May 1-4, 2023
- 2022 International Conference for High Performance Computing, Networking, Storage, and Analysis (SC 2022), Dallas, USA, Nov. 13–18, 2022
- 22nd IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID 2022), Taormina (Italy), May 19-22, 2022
- 3rd International Conference on Machine Learning for Cyber Security, Guangzhou (China), Mar. 22-26, 2021
- Symposium on Applied Computing - Bioinformatics track, (virtual conference), Mar. 22-26, 2021
- 25th International Conference on Pattern Recognition (ICPR), Milan (Italy), Jan. 10-15, 2021
- 22th IEEE International Conference on High Performance Computing and Communications (IEEE HPCC-2020), Fiji (Fiji), Dec. 14-16, 2020
- 13th IEEE International Conference on Cyber Physical and Social Computing (CPSCom-2020), Rhodes Island (Greece), Nov. 02-06, 2020
- 15th International Conference on Availability, Reliability and Security (ARES 2020), Dublin (Ireland) , Aug 25-28 2020
- Symposium on Applied Computing - Bioinformatics track, Brno (Czech Republic), Mar. 30 - Apr. 3 2020
- 11th International Symposium on Cyberspace Safety and Security, Guangzhou (China), Dec 1-3 2019
- 14th International Conference on Availability, Reliability and Security (ARES 2019), Canterbury (UK), Aug 26-29 2019
- 1st International Workshop on Consumer Cyber Security, Salerno, Sep 16-20 2019
- Symposium on Applied Computing - Bioinformatics track, Limassol, Cyprus Apr. 8-12, 2019
- 10th International Symposium on Cyberspace Safety and Security, Salerno, Oct 29-31 2018
- International Workshop on BIG data storage, processing and mining for Personalized MEDicine, Budapest (Hungary), Sep 2-5 2018

- 13th International Conference on Availability, Reliability and Security (ARES 2018), Hamburg (Germany), Aug 27-30 2018
- 2nd International Workshop on Parallel and Distributed Data Mining, Melbourne, Australia, Jul 2 - 5 2018
- 1st International Workshop on Advances in High-Performance Algorithms Middleware and Applications, Washington, DC, USA May 1-4 2018
- 3rd International Conference on Research Advancements in Computer Science & Technology (advisory board member), Telangana, India, Dec. 20-21, 2017
- Symposium on Applied Computing - Bioinformatics track, Pau, France Apr. 9-13, 2018
- 1st International Workshop on Biometrics and Image Forensics, Palinuro, Salerno, Jun. 3, 2016
- 6th International Conference on Intelligent Networking and Collaborative Systems (INCOS), Salerno, Sep. 10-12, 2014
- XXVI EURO - INFORMS Joint International Conference, Università di Roma - La Sapienza, Jul. 1-4, 2013
- 7th International Conference on Broadband and Wireless Computing, Communication and Applications, Victoria (Canada), Nov. 12-14, 2012
- 2011 IEEE International Conference on Advances in Computing & Communication, National Institute of Technology, Hamirpur (India) Apr. 8-10, 2011
- 7th International Conference on Algorithms and Complexity, Università di Roma - La Sapienza, May 26-28, 2010
- 1st National Workshop on Optimization and Graph Algorithms: substructures, paths and data structures, Salerno, May 3-4, 2007
- 1st National Workshop on "Data and Models for Infomobility and Urban Logistics, Università di Roma - La Sapienza, Dec. 12, 2005

Editorial Boards

- GigaByte Journal, BGI & Oxford University Press (ISSN: 2709-4715) Editorial Board Member