

Lemuel Puglisi

Department of Mathematics and Computer Science
University of Catania

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EDUCATION

- M.S. Computer science, data science specialization, University of Catania, 2023
Thesis: "DeepBrainPrint: A Novel Contrastive Framework for Brain MRI Re-Identification"
Grade: 110/110 *cum laude*
Candidate for the Archimede Prize (XX edition)
- B.S. Computer science, University of Catania, 2021
Thesis: "Autocoders dimensionality reduction in molecular datasets and subsequent prediction of clinical data"
Grade: 110/110 *cum laude*
Candidate for the Archimede Prize (XVIII edition)

WORK EXPERIENCES

- 2023 **Imaging Research Scientist**, Queen Square Analytics, London, UK
Machine-learning assisted clinical trials in multiple sclerosis
- 2022/23 **Research Internship**, Queen Square Analytics, London, UK
Deep Learning based Quality Assessment and Artifact Detection on MRI data
- 2022/22 **Computer Science Tutor**, University of Catania, Catania, IT
Tutoring activities for the course "Introduzione al Data Mining"
- 2022/22 **Computer Science Tutor**, University of Catania, Catania, IT
Tutoring activities for the course "Technologies for advanced programming"
- 2018/21 **Software Engineer**, Freelancer, Catania, IT
SMPP infostructures; administrative and management softwares

RESEARCH AREAS

Neurodegenerative disease progression modeling: understanding the progression patterns of neurodegenerative diseases in order to improve precision medicine and effectively stratify patients in clinical trials.

Medical imaging quality assessment: simulating, detecting, and correcting artifacts in medical images to enhance the accuracy and reliability of image-driven analysis.

Medical imaging analysis: development of cutting-edge medical imaging techniques that enhance diagnostic accuracy.

PUBLICATIONS

Conference Proceedings

- 2023 Puglisi, L., Eshaghi, A., Parker, G., Barkhof, F., Alexander, D. C., & Ravi, D. "DeepBrainPrint: A Novel Contrastive Framework for Brain MRI Re-Identification. In Medical Imaging with Deep Learning." *Medical Imaging with Deep Learning*. Nashville, US.

Journal Articles

- 2023 Ravi, D., Barkhof, F., Alexander, D. C., Parker, G. J., Puglisi, L., & Eshaghi, A. "An efficient semi-supervised quality control system trained using physics-based MRI-artefact generators and adversarial training", *Medical Image Analysis*, under review.

CERTIFICATIONS

- 2021 ESB C1 English certification, English Speaking Board (International) Ltd.
2020 CISCO IT Essential, Cisco Networking Academy

AWARDS

- 2023 Archimede prize candidature (XX edition), University of Catania
2021 Archimede prize candidature (XVIII edition), University of Catania
2020 2020/2021 Merit award - Scholarship, University of Catania
2019 2019/2020 Merit award - Scholarship, University of Catania
2019-22 2019/20 - 2020/21 - 2021/22 Academic Scholarships, ERSU

OPEN-SOURCE PROJECTS

- 2023 Solving Lunar Landing through Reinforcement Learning
2022 Graph coloring based surveillance video synopsis
2022 Visualization of path planning algorithms for a robotic system
2022 Numan: implementing numerical methods in python
2021 Breast cancer subtype prediction using gene expression profiles
2021 Visualization and query system for clusterized biological pathways
2021 Fmap: A distributed system for the monitoring of radio signal reception.

Please visit my Github profile to see my (40+) open source projects.

COURSES TAUGHT

University of Catania

Tutor activities - Introduction to Data Mining

Tutor activities - Technologies for advanced programming

TECHNICAL SKILLS

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|------------------|--|
| Coding languages | Python, R, PHP, Java, C, C++, Javascript, SQL, Solidity |
| Machine learning | PyTorch, Keras, Scikit-learn, Scikit-image, Numpy, Scipy, NetworkX, OpenCV |
| Data engineering | Logstash, Elastic Search, Kibana, Spark, Kafka, Hadoop, Flume, MySql, HDFS |
| Web development | Apache2, Nginx, Caddy, Laravel, Node.js, VueJS, CSS, HTML, Tailwind |
| Miscellaneous | Linux, Docker, Docker-compose |

PRIVACY POLICY

English. I give consent to process my data with the purpose of the recruitment process, in accordance to the Regulation of the European Parliament 679/2016, regarding the protection of natural persons and free movement of such data.

Italiano. Acconsento il trattamento dei dati personali contenuti nel presente curriculum vitae ai sensi dell'art. 13 del D. Lgs. 196/2003 e all'art. 13 del Regolamento UE 2016/679 per la protezione delle persone fisiche e giuridiche riguardo al trattamento dei dati personali.



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June 2023