Alessi Michele

CONTACT INFORMATION

FIRST NAME: MICHELE	
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LAST NAME: ALESSI

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PERSONAL INFO

I am a PhD Student at the LADE Data Engineering Lab, focusing on applying unsupervised learning techniques to generative models. My work involves exploring frameworks such as variational autoencoders and physics-informed neural networks (PINNs), with a strong emphasis on their application to genomics data.

EDUCATION

PHD IN APPLIED DATA SCIENCE AND ARTIFICIAL INTELLIGENCE

Area Science Park, University of Trieste Supervisors: Alex Rodriguez, University of Trieste Alessio Ansuini, Area Science Park

MASTER OF SCIENCE IN DATA SCIENCE AND SCIENTIFIC COMPUTING

University of Trieste, University of Udine, SISSA, ICTP

Grade: 110/110 cum laude

Thesis titled "Density-based clustering applied to Generative Models". Supervisors: Alex Rodriguez, Assistant Professor, University of Trieste Alessio Ansuini, Research Technologist, Area Science Park Alberto Cazzaniga, Research Technologist, Area Science Park

BACHELOR OF SCIENCE IN MATHEMATICS

University of Trieste Grade: 110/110 cum laude Thesis titled "Magnitude and Magnitude Homology for Metric Spaces and Graphs". Supervisors: Luca Manzoni, Assistant Professor, University of Trieste Giuliamaria Menara, PhD Candidate, University of Trieste

DIPLOMA DI LICEO SCIENTIFICO

Liceo Scientifico Giovanni Marinelli, Udine Grade: 100/100

AWARDS & HONORS

COLLEGIO UNIVERSITARIO "LUCIANO FONDA"

nov 2024 - present

oct 2022 - oct 2024

oct 2019 - oct 2022

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sep 2014 - jul 2019

oct 2019 - sep 2024

Trieste

For five years during my Bachelor's and Master's degrees, I was awarded a merit-based scholarship from Collegio Universitario Luciano Fonda, a residential college officially recognized as a Merit-Based University College.

WORK EXPERIENCES

Internship	ASIMOV Rome, Italy and Remote	jun 2024 - sep 2024
Machine Learning Engineer	Building AI tools to support legislative professionals. Practically working on fine-tuning LLMs and masking methods for relevant features retrieval.	
Freelance	SOCIAL FOX SRL	nov 2023 - may 2024
Data Analyst	Udine, Ifaly	

RESEARCH AND PROJECTS

Internship & Thesis	UNIVERSITY OF TRIESTE, AREA SCIENCE PARK Theoretical research on the attempt to bridge Unsupervised Learning met Models. We study in-depth the priors of Variational AutoEncoders, develo exploits the Density Peaks Advanced algorithm to iteratively improve the Supervisor: Alex Rodriguez, Assistant Professor, University of Trieste Alessio Ansuini, Research Technologist, Area Science Park Alberto Cazzaniga, Researcher, Area Science Park	oct 2023 - present hods with Generative pping a new model that prior during the training.			
University Project	 UNIVERSITY OF TRIESTE, SISSA, AREA SCIENCE PARK Theoretical research about resampling methods in Physics Informed Neural I research, we studied and implemented new sampling algorithms based on a techniques and redefined PINN's training objective using Variational Inference Physics (basics of PDEs) Unsupervised tasks (density-based clustering and density estimation meters Variational Inference Supervisors: Alessio Ansuini, Research Technologist, Area Science Park Alex Rodriguez, Assistant Professor, University of Trieste Dario Coscia, PhD Candidate, SISSA 	may 2024 - present Network. During this unsupervised learning ice. I strongly thods)			
University Project	 UNIVERSITY OF TRIESTE Theoretical project about Evolutionary Algorithms applied to Generative Ad During this project, we studied and implemented a new crossover operator of generators. I developed my knowledge of: Evolutionary Algorithms GANs Supervisor: Luca Manzoni, Assistant Professor, University of Trieste 	feb 2024 – present versarial Networks. acting on a population			
University Project	 UNIVERSITY OF TRIESTE Theoretical project on studying topological properties of the weights of a sinusing different techniques among which: Clustering and Dimensionality Reduction techniques Persistent Homology Mapper Algorithm Supervisor: Fabio Anslemi, Assistant Professor, University of Trieste 	apr 2023 – jun 2023 mple neural network,			
Project	COLLEGIO FONDA, UNIVERSITY OF GENOA This project introduces Inverse Problems and regularization techniques, with techniques and the role of Machine Learning in solving them, illustrated by a classic algorithms and AI methods. Supervisor: Giovanni Alberti, Full Professor, University of Genoa & MaLGa	sep 2023 a focus on imaging examples comparing			
Project	MATHABASE Together with a group of colleagues from the college, we developed propri students and researchers in learning and research in the STEM field. During this period, I greatly improved my soft skills in teamwork and leaders learned the basics of web programming (HTML, JavaScript, React) and how page design, such as Figma.	gen 2023 – present etary software to assist hip. Additionally, I to use software for web			
Project	COLLEGIO FONDA, AINDO Project in collaboration with Collegio Fonda and AINDO. During the project tuning a diffusion model for the image inpainting problem. Furthermore, we organized a dissemination event within the college entitled Panel Discussion" inviting speakers from the academic and corporate world communication and problem-solving skills. Supervisor: Sebastiano Saccani, AINDO, Head of R&D and Co-founder	oct 2023 - may 2024 , we worked on fine- d "Industry & Academy - . I challenged my			
VOLUNTEERING & ACTIVITIES					

Membership	ARTIFICIAL INTELLIGENCE STUDENT SOCIETY "AI2S"	2021 - present
Volunteer	TRIESTE NEXT	2022 - 2023
Cellist	FILARMONICI FRIULANI	2017 - 2024

LANGUAGES