

# CS PhD Seminar Series

May 19th

| 14:30-15:30

| Room 215

## Discovering and Mitigating Bias in Deep Image Classifiers

Deep image classifiers often latch onto spurious correlations between input images and target labels, such as background, texture, color, demographic attributes. These become shortcuts that inflate training accuracy but collapse once tested under distribution shift and can raise serious fairness concerns. After a short introduction to the problem, this seminar will be an overview of some contributions made in the field of Unsupervised Model Debiasing. The talk will cover bias discovery methods that assign human-interpretable names to the spurious features a model has learned, the use of synthetic data to overcome specific challenges in debiasing, and an adversarial entropy-based approach that pushes models away from their own shortcuts. The last part of the seminar will be a brief look at more recent developments on how specific optimization choices can impact baseline measurements in biased scenarios, and how the presence of bias in training data can interact with domain adaptation.

Speaker: [Massimiliano Ciranni](#)



Massimiliano Ciranni is a third year PhD student at DIBRIS and the Machine Learning Genoa Center (MaLGA), University of Genoa, where he previously earned both his Bachelor's and Master's degrees in Computer Science. He has been working in the MLV (Machine Learning and Vision) unit inside MaLGA, under the supervision of Prof. Vito Paolo Pastore. His research focuses on deep learning for computer vision, with applications to biological and biomedical image analysis. His main work centers on the robustness of deep learning models, especially regarding unsupervised bias discovery and mitigation, with the broader goal of building models that remain dependable under spurious correlations and distribution shifts.

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## Continuous Talent Intelligence: A DevOps-Inspired Knowledge Graph and RAG Architecture for Real-Time Competency Management

In medium or large-sized companies, understanding the range of skills and competencies within the organization is a complex challenge. As companies grow, maintaining a clear picture of internal expertise becomes difficult. This thesis defines a dynamic model for identifying and mapping organizational competencies, adapting to the ever-changing nature of businesses. We propose a DevOps-oriented approach to build an Agile Competences and Skills Network, leveraging data from development tools, static analysis, and AI-driven techniques. We introduce a Competency Management Support Tool (CMST) that uses a Knowledge Graph to represent skills and a Retrieval-Augmented Generation (RAG) system to provide personalized microlearning and decision support.

Speaker: [Giampiero Granatella](#)

Giampiero Granatella is a Computer Engineer and currently a PhD student (XXXIX Cycle) in Computer Science and Systems Engineering at the University of Genoa. He earned his degree in Computer Engineering from the University of Genoa in 2002. Following his graduation, he served as a consultant for the Ministry of Innovation and Technology and subsequently held various roles within the private sector. Currently, he is a Partner and Software Architect at ManyDesigns, a firm with 90 employees, where he specializes in architectures and systems for diverse domains, including Healthcare, Finance, and Public Administration. He is currently pursuing his PhD research, which focuses on the integration of Human Resources Management with Knowledge Graphs and Artificial Intelligence.

