

Mara Graziani, Ph.D.

Doctor of Philosophy – PhD · Computer Science - University of Geneva

Current position:

Post-doc Researcher, University of Applied Sciences of Western Switzerland

(Hes-so Valais), Sierre

Research Scientist, IBM Research Europe, Zurich

(she/her/hers)

Starting the human-machine conversation in microscopy imaging

Artificial intelligence (AI) is on its journey to becoming an omnipresent tool that augments our daily lives. Yet, intelligent systems should not be left uncontrolled nor too eagerly trusted. In fields like healthcare, wrong decisions may cause involuntary harm to patients, thus ensuring the safety of AI-based support is of utmost importance.

Graziani and her team have been at the forefront of advancing the human-machine conversation in microscopy imaging. Her work tackled the cognitive barrier that prevents clinicians from consulting and understanding AI suggestions. She developed novel methods that associate the automated identification of cancerous developments to well-known and understandable clinical features. Furthermore, she demonstrated the effectiveness of modelling the diagnostic criteria used by clinicians into high-level concepts with a computational definition. By using these concepts to guide the training of intelligent systems, she significantly improved the capabilities of the models to perform well on new patients.

In addition to her research activities, Graziani has been actively promoting the importance of assessing the safety and reliability of AI systems. She took the initiative to establish a global network of experts, dedicated to mentoring young scholars on this crucial topic. Lately, her focus shifted to an even broader concern, that is equality and inclusion in scientific research. Her goal is to raise awareness about these important issues and empower students and researchers from underdeveloped countries. By doing so, she aims to address the disparities in the representation of the global world population in scientific datasets and research outcomes.