

TITLE: Talents and technology: training the Artificial Intelligence generation

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The novel jobs of the next future will mix innovation, practical problem solving skills and domain expertise, with more and more fading borders between these aspects. All professions are expected to be transformed by technology and by Artificial Intelligence (AI) in particular: access to data, computing and above all to skilled human resources is already a battlefield between nations and major players in technology. Talents will undoubtedly play a key role, and not necessarily only in the technoscience domains, as the the AI transformed jobs are not identifiable in standards terms neither in terms of education and of workplace contexts. Indeed the typical development cycle of AI solutions is based on the capacity of operating a continual and shared learning, in which talents need to be part of teams. As a proactive initiative for promoting the students' awareness and responsiveness towards this new scenario, a research foundation (FBK), an academic body (the ODFLab of the University of Trento) and a graphical art high school (Istituto Pavoniano Artigianelli) recently founded the "AI Open Innovation Lab". As a mission, the Lab aims at experimenting novel education models that promote openness to change and innovation and stimulate students' confidence, autonomy and proactivity. The AI Open Innovation lab is based on a broadened educating community of teachers, scientists and experts in teaching strategies and inclusive education.

The Lab vision is shaped upon the experience of the WebValley Summer School for high school students, possibly the first interdisciplinary Data Science initiative in Europe for national and international talents. Since 2001, more than a total of 350 students (17-18 y.o., or 11th grade) have experienced working as a team with peers and scientists. The school is strongly project-based, with the team challenged to develop a new technology to address ethical goals ranging from AI models for healthcare (e.g deep learning for paediatric neuro-oncology, wearables monitoring in autism), climate change monitoring or digital agriculture. Participants typically include national finalists of STEM Olympics. More than forty international finalists from the Intel ISEF have joined WebValley. Notably, the WebValley format is developed as a three weeks retreat in a data science lab with relevant computing resources and high-speed internet connectivity; the lab is temporary, installed in a remote location of high environmental quality (e.g. a small Alpine village). The key feature of WebValley is to offer a real research experience as a team, in which different skills can contribute to a common goal. With a 37% of female participants, applications of AI have shown the potential of students of all genders to contribute to innovation, avoiding a limited "geek-only" perimeter. The AI Open Innovation Lab in Trento now aims at expanding the WebValley experience in a new setting, again in the bottom-up modality based on peer learning. Talented high school students are challenged to develop open innovation projects, mostly sponsored by industrial partners, in a coworking space, with the assistance of WebValley alumni as tutors and experts in AI and design as consultants.

Keywords: Artificial Intelligence, project-based learning, teamwork, open innovation