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MAGAZINE

WebValley 2026 Challenge revealed

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A team of about 20 students, collaborating with researchers from FBK, will join the AI weather revolution reinventing Weather and Climate research all over the world.

WebValley is the FBK summer school for the dissemination of interdisciplinary research: almost 500 students (17-19 years old) have attended the WebValley camps since its first edition in 2001. WebValley started as a regional initiative for high school students from Trentino Alto-Adige SüdTirol, and it is now an opportunity for national and international students to experiment with scientific research.

How it works

The WebValley **formula**: Create a team of enthusiastic and motivated high school students (18 years old) tutored by researchers.

The team accepts a **challenge** by a collaborating scientist from **Ecology**, **Biology, Physics** or **Social Sciences** and develops in two weeks a new **prototype** for data analysis and management.

The school strongly encourages the participation of all genders and various backgrounds.

Students are introduced to Open Source software solutions (scientific programming, web interfaces, database, GIS and data analysis); they discuss, design and develop the new system interacting with scientists.

They learn to select tools, organize their own workplan, and respond with a new solution to a problem of ethical interest. A working prototype solution and technical results are presented at the end of the two-week period.

The project activities are developed mostly in teamwork as in a true research environment, informal and characterized by high quality in resources, competence and organization. Each student can differently contribute to the project with ideas, software code or data preparation, design of web interfaces and project presentation.

Fellowships are sponsored by FBK and partner organizations, covering tuition and accommodation, as well as computing and scientific resources.

Families can be asked for a contribution for sports and social activities organized on weekends.

“Our common home”

The **2026 Edition** will take place in Trento from June 21 to July 4: “Weather Meets Artificial Intelligence: Contributing to Open Science for Earth Observation” is this year’s topic.

Participants will go beyond exploration: using **machine learning** techniques and modern software engineering practices, they will build real, open-source tools and resources for the scientific community.

Working in small teams, students will prepare and work on open weather and environmental datasets, develop and train machine learning models for weather prediction and analysis, create interactive web applications and visualizations, and write documentation that makes scientific data accessible to everyone.

Every line of code and every dataset produced during the school will be released as **open source** .

Experts from local and national weather agencies, international research institutions, and the open-source **Earth science community** will join our journey in teaching lessons and supporting the WebValley team in tackling diverse challenges that will be explored in the two-week school program. This year’s edition is integrated into the **IT4LIA** framework, the Italian AI Factory. This partnership offers students a rare bridge between academic curiosity and industrial-grade technology. Participants will gain exclusive access to HPC resources, enabling them to witness firsthand the infrastructure needed to build the next generation, powerful AI.

As key part of this **immersive experience**, students will be actively engaged in delivering real contributions that anyone in the world can use, improving their skills in handling Earth observation data, and gaining hands-on experience with state-of-the-art AI technology, Python, PyTorch, cloud-native data formats, app development, and collaborative workflows with Git and GitHub.

Apply to the General Track by March 29: https://webvalley.fbk.eu/tracks-info/

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