CERN
NexTGen
Next Generation Triggers

Outreach (WP4.1) and Education Programmes (WP4.2)

First NextGen Technical Workshop, 25 November 2024, CERN

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with support from IT Communication and Outreach team

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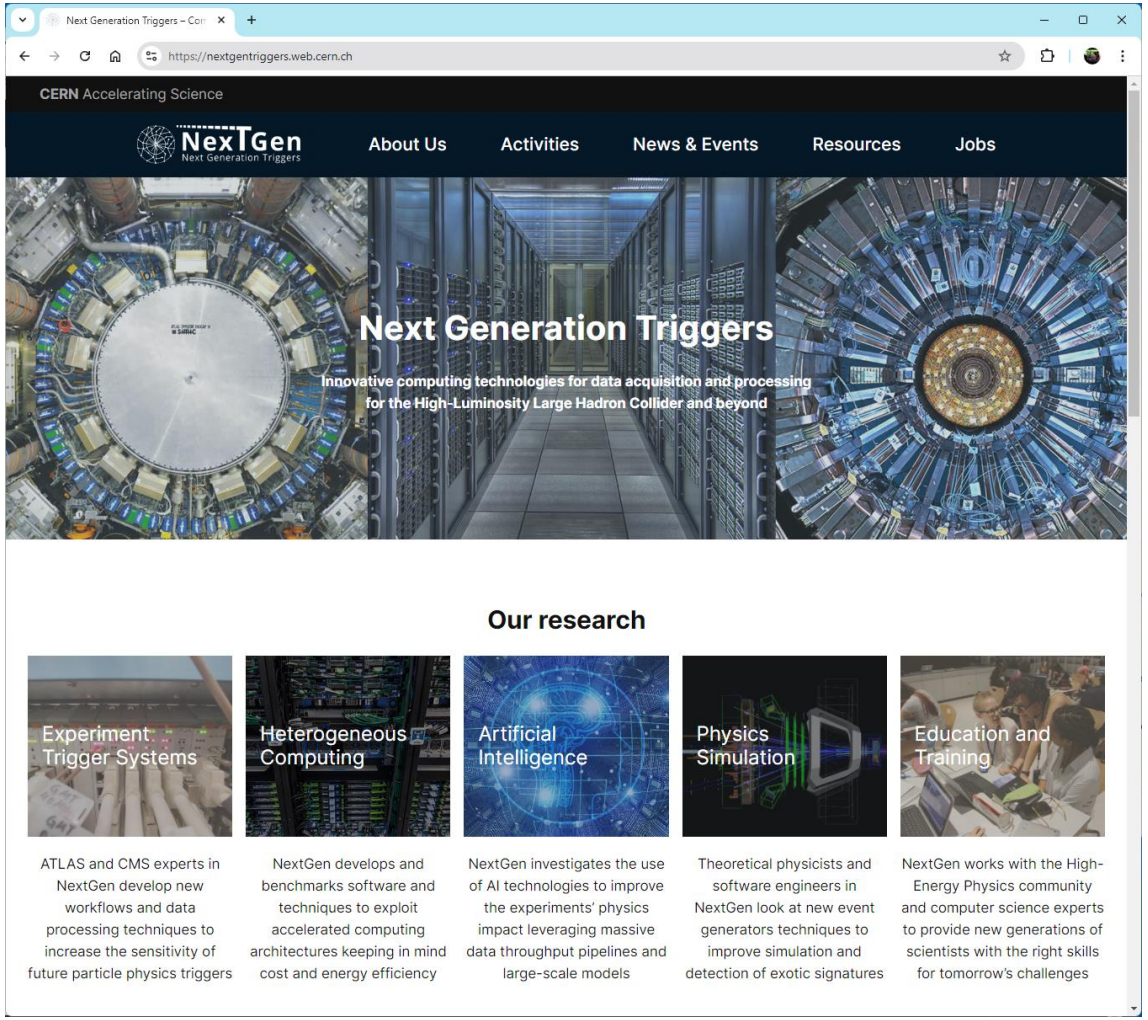
Outreach (WP 4.1) in 2024

- Articles and social media presence
  - CERN Web site, CERN Courier, X, Facebook,
- Advertising open positions
- Indico category
- Web site
  - https://nextgentriggers.web.cern.ch/
- Templates and logos published
- Events:
  - NextGen All Hands meeting, 24 September 2024 https://indico.cern.ch/event/1421591/
  - NextGen Technical Workshop, 25-27 November 2024 https://indico.cern.ch/event/1421629/
- Exchange programme budget still available
- Team:
  - Alex Lasa Lamarca and the IT Communication section



WP 4.1 Exchange programme

- The education and outreach work package has also a funded exchange programme aiming to enable world-class scientists and engineers to collaborate with academic and industry partners
- The goal is to ensure continued skills development of world-class scientists and engineers able to combine domain-specific knowledge of high-energy physics with data science and artificial intelligence
- Activities are organized by
  - Promoting exchanges by allowing scientists and researchers to come to CERN and work with the project experts
  - Allow project members to visit external institutes and companies

Education Programmes (WP 4.2) in 2024

- Participation in the following schools
  - International School of Triggers and Data Acquisition (ISOTDAQ) – June
  - CERN School of Computing – September
  - Smarthep Edge Machine Learning School – September
  - School on “Artificial intelligence and modern physics” – Sep-Oct
  - Efficient Scientific School of INFN - October
  - Thematic School of Computing on Machine Learning – October
- Sponsored EUCAIFCon - https://indico.nikhef.nl/event/4875/
- Advanced training courses on various technologies (at CERN or in industry)
  - Parallel, High-performance, High-throughput Computing, C++, Python, Data handling, Machine Learning, CUDA, FPGA programming, VHDL, Networking, Neural Networks …
- Team:
  - Felice Pantaleo, Vicky Batsari

The importance of Education in NextGen

- NextGen is a cutting-edge research project involving many disciplines, including high-energy physics data analysis, machine learning, software development for heterogeneous architectures, hardware architectures (GPUs, FPGAs)
- The the goals and plans for education are ambitious and increasing over the 5 years project duration
  - For the whole duration, the education and continued skills development of young scientists, world-class scientists, and engineers
    - Become an expert in a specific field
    - Understand other fields
  - Ensure we know how to combine domain-specific knowledge of high-energy physics with data science, artificial intelligence proficiency and hardware architectures
  - From the third year, the project has also the ambition to teach and disseminate the results of the project.
    - This is clearly one of the main deliverable of the whole project