

The SMARTHEP European Training Network

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Abstract. Synergies between **MA**chine learning, **Re**al-Time analysis and **Hy**brid architectures for efficient **E**vent **P**rocessing and decision making (SMARTHEP) is a European Training Network with the aim of training a new generation of Early Stage Researchers to advance real-time decision-making, effectively leading to data-collection and analysis becoming synonymous.

SMARTHEP will bring together scientists from the four major LHC collaborations which have been driving the development of real-time analysis (RTA) and key specialists from computer science and industry. By solving concrete problems as a community, SMARTHEP will bring forward a more widespread use of RTA techniques, enabling future HEP discoveries and generating impact in industry. The students will contribute to European growth, leveraging their hands-on experience machine learning and accelerators towards concrete commercial deliverables in fields that can most profit from RTA, such as transport, manufacturing, and finance.

This contribution presents the training and outreach plan for the network, as well as some of its early results, and is intended as an opportunity for further collaboration and feedback from the CHEP community.

1 Introduction

The Synergies between **MA**chine learning, **Re**al-Time analysis and **Hy**brid architectures for efficient **E**vent **P**rocessing and decision making (SMARTHEP) European Training Network is a European Union Horizon-funded training network, with a focus on the real-time analysis techniques deployed in high energy physics research and in industry. The network centres around 12 doctoral students across Europe employed as Early Stage Researchers within the Marie Skłodowska-Curie Actions (MSCA) framework.

2 SMARTHEP as a European Training Network

For bibliography use [1]

2.1 Subsection title

Don't forget to give each section, subsection, subsubsection, and paragraph a unique label (see Sect. 2).

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3 Real-time analysis

a

3.1 Principles of RTA

b

3.2 Tools of RTA

c

4 Early stage researchers

d

5 Network outcomes

e

6 Conclusion

g

References

- [1] Journal Author, Journal **Volume**, page numbers (year)
- [2] Book Author, *Book title* (Publisher, place, year) page numbers