





## EDITORIAL

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Dear readers,

Launched in April 2021, this 3-year project is funded by the European High Performance Computing Joint Undertaking (EuroHPC JU) under the 2019 call of Extreme Scale Computing and Data Driven Technologies for re- search and innovation actions.

The SparCity project aims at creating a supercomputing framework that is providing efficient algorithms and coherent tools specifically

designed for maximizing the performance and energy efficiency of sparse computations on emerging HPC systems, while also opening up new usage areas for sparse computations in data analytics and deep learning.

SparCity delivers a coherent collection of innovative algorithms and tools for enabling both high efficiency of sparse computations on emerging hardware platforms.

The SparCity Coordination,  
Didem Unat



*In-person Meetings | June 1-3, 2022 (Istanbul, Turkey) and June 15-16, 2023 (Lisbon, Portugal)*





## PAST EVENTS

### ☒ EuroHPC Projects Shaping Europe's HPC Landscape | January 17, 2024

This workshop was co-located with HiPEAC 2024, in Munich, Germany. EuroHPC-JU projects are ambitious but pragmatic projects that are shaping the future of HPC in Europe. They deliver a coherent collection of innovative algorithms, architectures, programming systems, and software tools for enabling both performance and energy efficiency of applications from computational science, deep learning and data analytics.

In this workshop, each project presented their progress, developments, and highlight their important contributions to the field of HPC. The workshop also raised interests from several stakeholders who wish to get a global view of all 10 projects. Osman Yasal from Koç University and SparCity Project presented the latest updates on SuperTwin. Prof. Didem Unat and the PI of the ADMIRE project, Prof. Jesus Carretero Perez, organized this event who had more than 35 attendees.



### ☒ In-person Meeting | January 22-24, 2024

From 22 to 24 January, the SparCity members joined together in the Leibniz Supercomputing Center in Munich for a three-day meeting to share and discuss the progress made on each work package and plan the last activities before the closure of the project. On the second day, the SparCity team visited the Leibniz Supercomputing Centre to compute cube / HPC and quantum computing systems.



### ☒ SuperTwin: A DigitalTwin for HPC Systems Webinar | February 22, 2024

On February 22, 2024, SparCity Project hosted an engaging online seminar titled "SuperTwin: A Digital Twin for HPC Systems," attracting 22 attendees. This event, part of the SparCity initiative supported by EuroHPC-JU, showcased the innovative SuperTwin ecosystem, designed to enhance High-Performance Computing (HPC) systems. The seminar highlighted SuperTwin's capabilities in system and hardware performance monitoring, live performance modeling, and advanced mapping and augmentation, all accessible through a simple Python API. The insights provided during the webinar are expected to significantly impact the future of HPC system management and optimization.



*The e-flyer of the webinar*



## UPCOMING EVENTS

Join us for a webinar on March 7, 2024, from 14:00 to 15:30 (CET), as we introduce SparseBase and SparseViz, innovative tools from the SparCity project funded by EuroHPC-JU. Discover how SparseBase, a preprocessing library, efficiently handles sparse data structures like matrices, graphs, and tensors. Learn about SparseViz's capabilities in reordering, partitioning, and visualizing sparse data to extract structural insights. Don't miss this opportunity to enhance your data processing skills.

Register now:

<https://indico.truba.gov.tr/event/160/>



*The e-flyer of the webinar*



## COMMUNICATION, DISSEMINATION & OUTREACH

### ☒# #MeetTheTeam and #CodeVideos Series

New videos were published where you can learn more about a different team member and the work developed within SparCity.



[# MeetTheTeam videos](#)

[#CodeVideo videos](#)



## PUBLICATIONS

Rodrigues, A., Sousa, L., Ilic, A. (2023). Performance Modelling-Driven Optimization of RISC-V Hardware for Efficient SpMV. In: Bienz, A., Weiland, M., Baboulin, M., Kruse, C. (eds) High Performance Computing. ISC High Performance 2023. Lecture Notes in Computer Science, vol 13999. Springer, Cham. [https://doi.org/10.1007/978-3-031-40843-4\\_36](https://doi.org/10.1007/978-3-031-40843-4_36)



## THESES DEFENDED

### Mandana Bagherimarzijarani, M.Sc Thesis

(January 2024)

Title: An Automated Framework for Concurrent Graph Processing Kernel Fusion on GPU

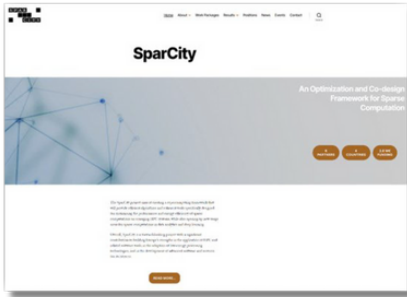
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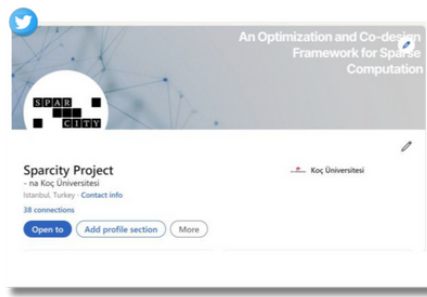
**WEBSITE**



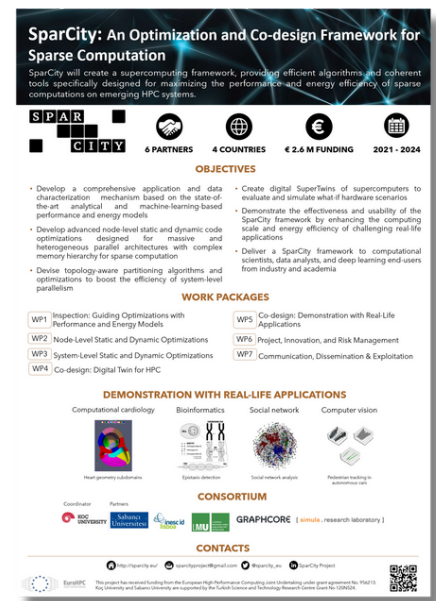
<https://sparcity.eu>



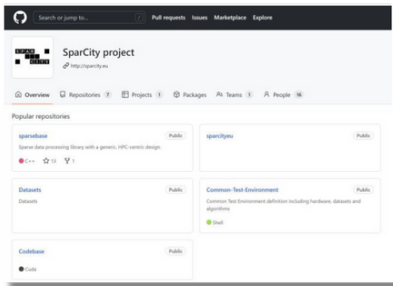
**SOCIAL MEDIA**



**PROMOTIONAL**



**REPOSITORY**



<https://github.com/sparcityeu>



**MORE INFORMATION**

<https://sparcity.eu>

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