

Processing-in-memory architectures and programming libraries for bioinformatics algorithms

Fact Sheet

Project Information

BioPIM

Grant agreement ID: 101047160

DOI

[10.3030/101047160](https://doi.org/10.3030/101047160) 

EC signature date

21 February 2022

Start date

1 May 2022

End date

30 April 2026

Funded under

The European Innovation Council (EIC)

Total cost

€ 1 966 665,00

EU contribution

€ 1 966 665,00

Coordinated by

BILKENT UNIVERSITESI VAKIF



Türkiye

Project description

Innovative computing algorithms based on processing-in-memory technology

High-throughput sequencing (HTS) of DNA and RNA is an indispensable part of the research, development and healthcare system. Personal genome sequencing is used in preventive and personalised medicine; HTS technologies can identify rare disease genetic mutations, cancer subtypes, and infections and antibiotic resistance. There is a need for fast, energy- and cost-efficient technologies for genomics research – without the involvement of data centres and cloud platforms. The EU-funded BioPIM project aims to develop powerful edge computing based on emerging processing-in-

memory (PIM) technologies. The project will focus on designing bioinformatics algorithms and data structures and several types of PIM architectures to achieve high cost, energy and time efficiency.

Fields of science

[medical and health sciences](#) > [health sciences](#) > [infectious diseases](#) > [RNA viruses](#) > **[ebola](#)**

[natural sciences](#) > [biological sciences](#) > [genetics](#) > **[mutation](#)**

[medical and health sciences](#) > [clinical medicine](#) > **[oncology](#)**

[medical and health sciences](#) > [health sciences](#) > **[personalized medicine](#)**

[medical and health sciences](#) > [basic medicine](#) > [pharmacology and pharmacy](#) > [drug resistance](#) > **[antibiotic resistance](#)**

Keywords

[processing-in-memory](#)

[algorithms](#)

[string search](#)

[high throughput sequencing](#)

[nanopore sequencing](#)

Programme(s)

[HORIZON.3.1 - The European Innovation Council \(EIC\)](#) MAIN PROGRAMME

[HORIZON.3.1.1 - The Pathfinder for Advanced Research](#)

Topic(s)

[HORIZON-EIC-2021-PATHFINDEROPEN-01-01 - EIC Pathfinder Open 2021](#)

Call for proposal

[HORIZON-EIC-2021-PATHFINDEROPEN-01](#)

[See other projects for this call](#)

Funding Scheme

Coordinator



BILKENT UNIVERSITESI VAKIF

Net EU contribution

€ 380 000,00

Address

Eskisehir yolu 8 km
06800 Bilkent ankara

 Türkiye 

Region

Batı Anadolu > Ankara > Ankara

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Other funding

€ 0,00

Participants (5)



INSTITUT PASTEUR

 France

Net EU contribution

€ 390 375,00

Address

Rue du docteur roux 25-28
75724 Paris 

Region

Ile-de-France > Ile-de-France > Paris

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Other funding

€ 0,00



CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

 France

Net EU contribution

€ 338 000,00

Address

Rue michel ange 3

75794 Paris 

Region

Ile-de-France > Ile-de-France > Paris

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Other funding

€ 0,00



TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY

 Israel

Net EU contribution

€ 49 687,50

Address

Senate building technion city

32000 Haifa 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Other funding

€ 0,00



SAS UPMEM

 France

Net EU contribution

€ 482 375,00

Address

6 place robert schuman

38000 Grenoble 

SME 

Yes

Region

Auvergne-Rhône-Alpes > Rhône-Alpes > Isère

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Other funding

€ 0,00



BAR ILAN UNIVERSITY

 Israel

Net EU contribution

€ 326 227,50

Address

Bar ilan university campus

52900 Ramat gan 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Other funding

€ 0,00

Partners (2)



EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH

 Switzerland

Net EU contribution

€ 0,00

Address

Raemistrasse 101

8092 Zuerich 

Region

Schweiz/Suisse/Svizzera > Zürich > Zürich

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Other funding

No data



IBM RESEARCH GMBH

 Switzerland

Net EU contribution

€ 0,00

Address

Saeumerstrasse 4

8803 Rueschlikon 

Region

Schweiz/Suisse/Svizzera > Zürich > Zürich

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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Other funding

No data

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European Union, 2024