

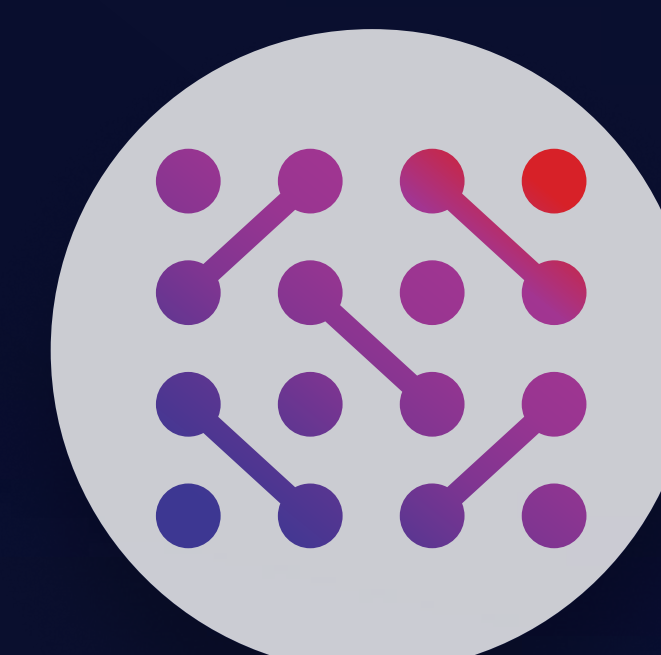


HYBRAIN aims to develop a hybrid electronic-photonic super-fast and energy-efficient computing system inspired by the human brain to enable innovative Edge Computing and Artificial Intelligence solutions.

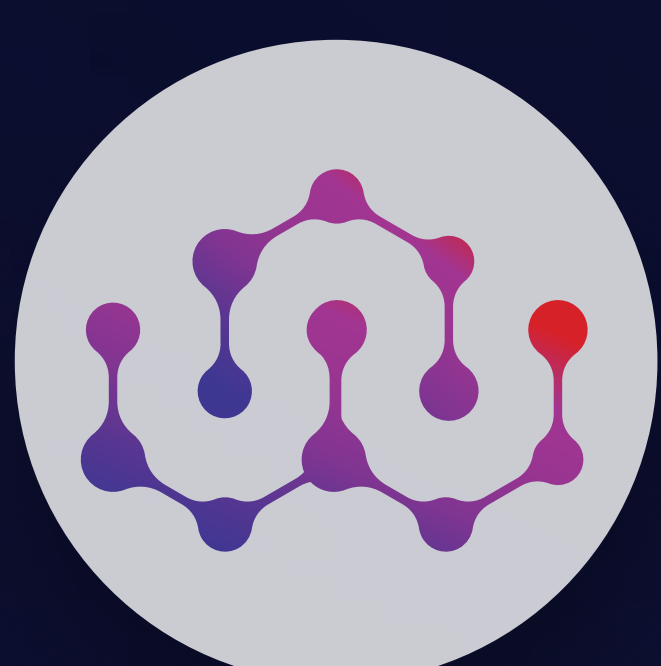
## Key Exploitable Results



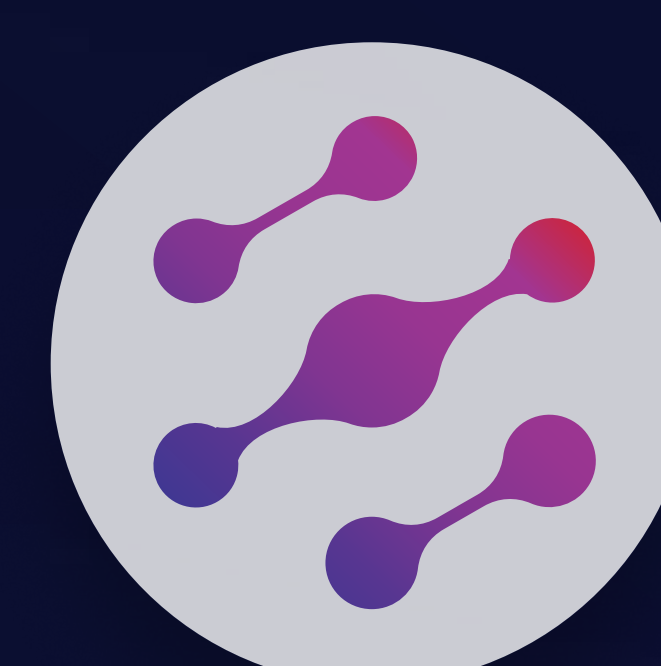
Analog Hardware Acceleration Kit for enhancing AI experiments and drive AI advances.



Python package for designing photonic integrated circuits on semiconductor development processes.



Specialised surrogate models, in the form of a software framework - brains-py package - for implementing deep-learning neural networks and studying dopant-network processing units.

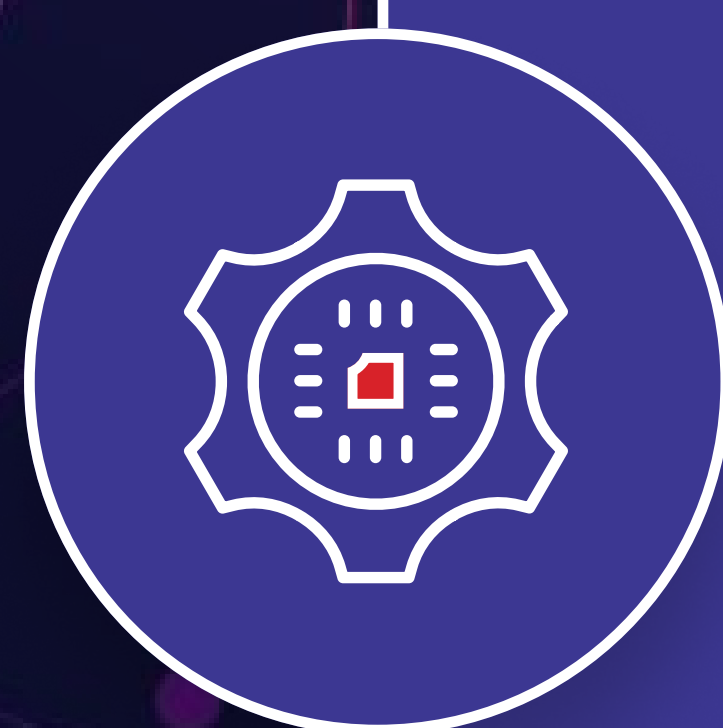


Method for automatic speech recognition.

15+ Papers created with financial support from HYBRAIN. Explore the publications!

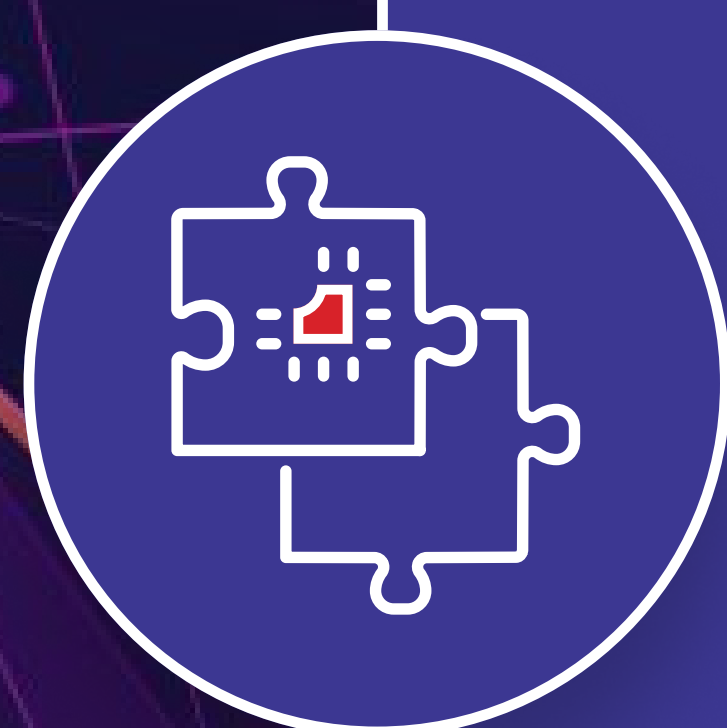


## Technologies leveraged in the Project



### Photonic Convolution Processor (PCP)

Employs light for data processing, offering high bandwidth and low latency, revolutionizing big data handling with increased speed and energy efficiency.



### Analog In-Memory Computing (AIMC)

Integrates computation within memory for reduced latency and enhanced parallel processing capabilities, ideal for handling extensive data tasks.



### Dopant Network Processing Units (DNPUs)

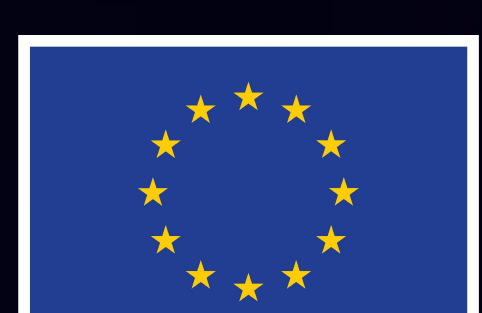
Utilises dopants within semiconductors to create energy-efficient processors that enhance computational speed and reduce neural network complexity.

Project coordinator

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European Innovation Council



The HYBRAIN project has received funding from the European Union's Innovation Council Pathfinder programme under Grant Agreement no.101046878.



Funded by the European Union