The DeepHealth Toolkit: a Unified Framework to Boost Biomedical Applications

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The DeepHealth Project

- Put HPC computing power at the service of biomedical applications
- Increase the productivity of medical personnel and IT professionals
- Offer a unified framework adapted to exploit underlying heterogeneous HPC and Cloud architectures

Duration: 36 months
Starting date: Jan 2019

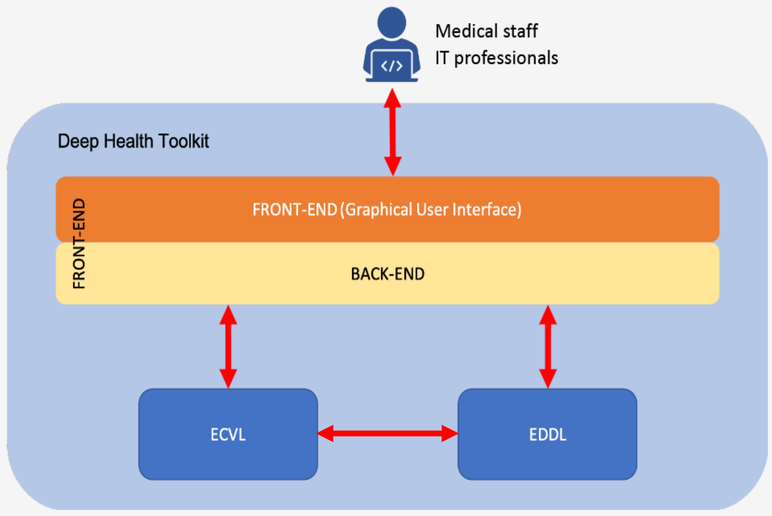
Budget 14.642.366 €
EU funding 12.774.824 €

22 partners from 9 countries
Research centers, Health organizations, large industries and SMEs

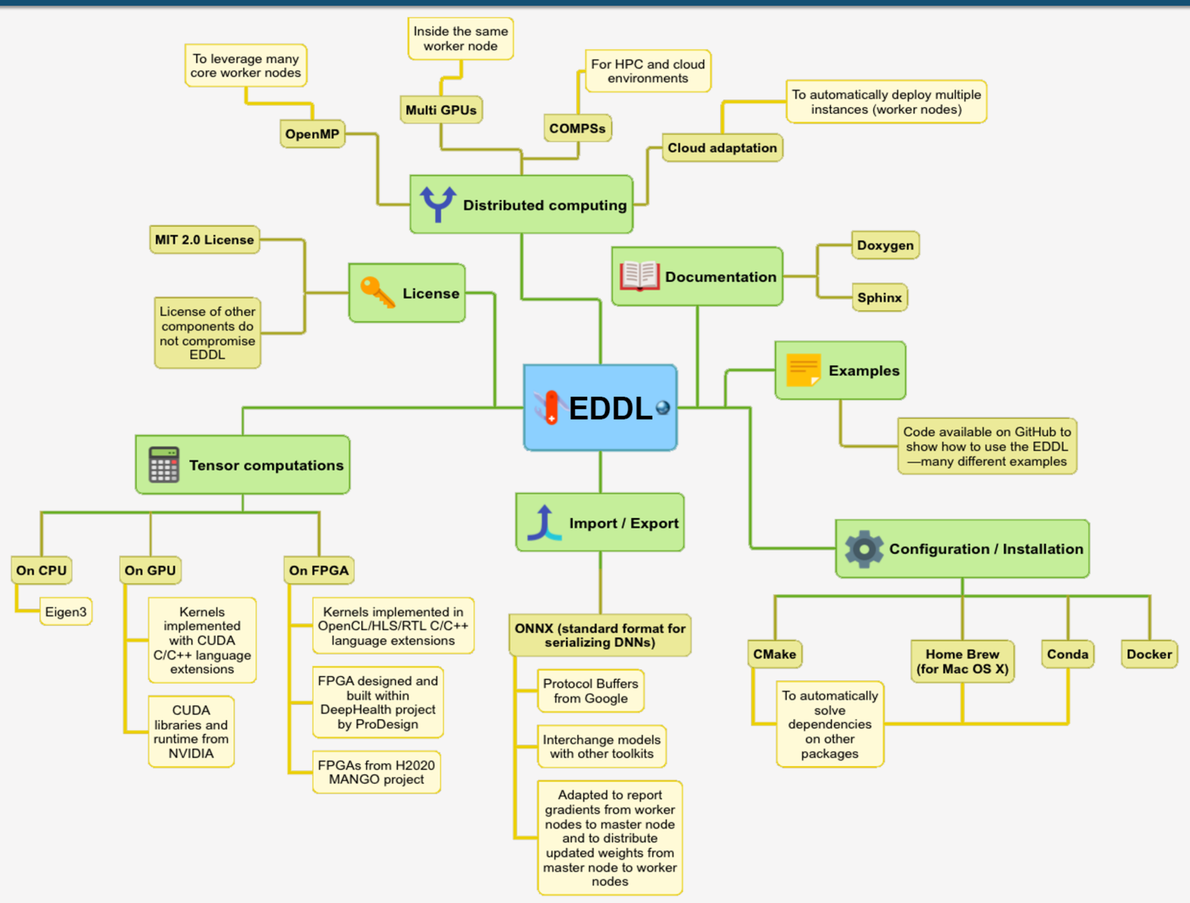
The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825111.

The DeepHealth Toolkit

- Three main components:
  - EDDL – European Distributed Deep Learning Library
  - ECVL – European Computer Vision Library
  - Front-end – RESTful web service + web-based GUI
- Toolkit open-source and available at github.com/deephealthproject

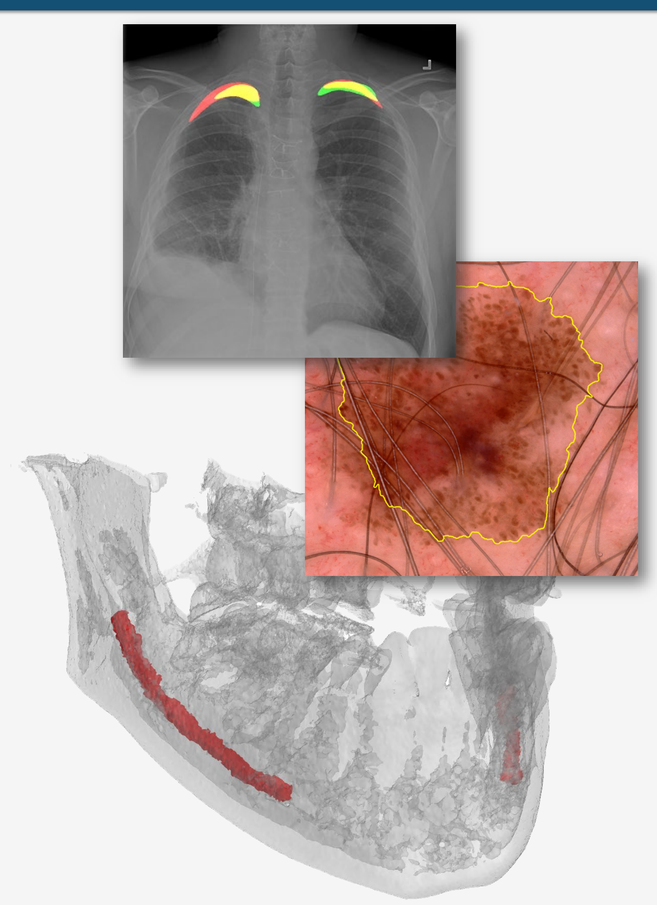


EDDL



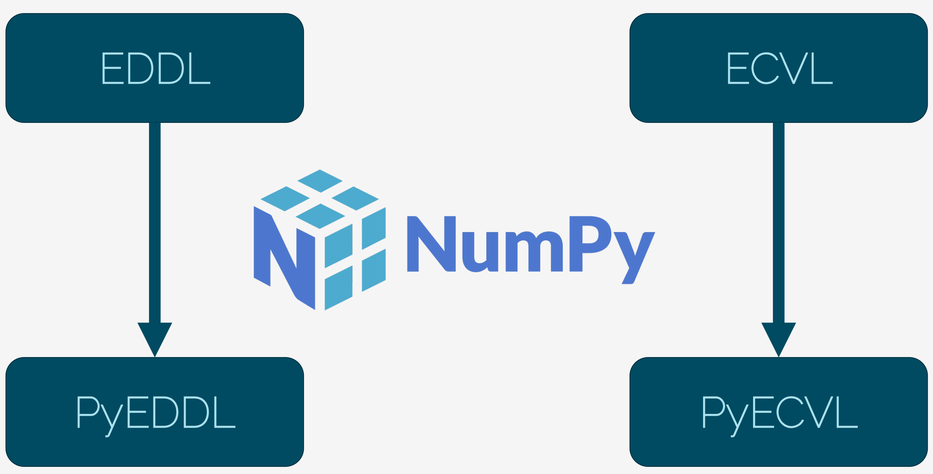
ECVL

- Integrates existing state-of-the-art Computer Vision and Image Processing libraries
- Supports multiple medical imaging formats (NIfTI, DICOM, TIFF, whole-slide)
- Core functionalities implemented for both 2D images and 3D volumes:
  - Reading and writing
  - Processing
  - Visualizing



Python APIs

- PyEDDL and PyECVL have been designed for binding Python code to existing C++ code
- Seamless conversion between EDDL Tensor or ECVL Image objects and NumPy arrays



Benchmarking