

AIMHiGH

NCC Montenegro (NCC 34),
24.06.2022.

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Industrial HPC Course



EURO

SUCCESS STORY IN Precision agriculture

COMPANY XY

HPC & AI Expert: DigitalSmart
End users: Radinović Company and Meso-Promet Franca
Domain Expert: University of Donja Gorica
ISV: DunavNET
Partner University of Donja Gorica - UDG is part of the NCC Montenegro

THE PROBLEM

to monitor the number of chickens, their weight, and dead chickens with the help of artificial intelligence (AI) and a camera in which AI models will be integrated, and placed on poultry farms

SUCCESS STORY DETAILS

HPC provider : Yotta AC
Domain Expert:
DigitalSmart and UDG
Country: Montenegro

THE HPC PROBLEM DOMAIN

AI /ML ENABLED BY HPC FOR EDGE CAMERA DEVICES FOR THE NEXT GENERATION HEN FARMS

HPC is used to speedup Deep learning algorithm execution

THE SOLUTION

ML models for a) detection of chicken, and b) segmentation of each chicken in the image. These models will be used for the development of IoT edge sensors to count the number of chickens in an image and/or video, and possibly assess their growth (weight and homogeneity).

THE BENEFITS

Proposes the use of HPC and deep learning AI to create prediction models that can be deployed on the edge devices equipped with camera sensors for the use in IoT/AI solutions in the poultry sector

SUCCESS STORY IN Precision agriculture

THE PROBLEM

Researchers from this consortium have engaged a large number of poultry farms of different sizes. The main goal of the engagement was to understand their business challenges and to present an IoT based poultry farm management solution, supported by a set of sensors for environmental monitoring. The experiment targets the use of HPC and deep learning AI to create prediction models that can be deployed on the edge devices equipped with camera sensors for the use in IoT/AI solutions in the poultry sector.

THE HPC PROBLEM DOMAIN

AI /ML ENABLED BY HPC FOR EDGE CAMERA DEVICES FOR THE NEXT GENERATION HEN FARMS

To validate the use of HPC in AI/ML training and evaluate acceleration in the development of these prediction models.

THE SOLUTION

Monitoring the number of chickens, their weight, and dead chickens with the help of artificial intelligence (AI) and a camera in which AI models will be integrated, and placed on poultry farms. Partners are working on the following ML models: a) detection of chicken, and b) segmentation of each chicken in the image. These models will be used for the development of IoT edge sensors to count the number of chickens in an image and/or video, and possibly assess their growth (weight and homogeneity).

THE BENEFITS

Proposes the use of HPC and deep learning AI to create prediction models that can be deployed on the edge devices equipped with camera sensors for the use in IoT/AI solutions in the poultry sector

Speedup decision process and deep learning algorithm execution



AIMHiGH

Application Experiment

AI/ML Enabled by HPC for Edge
Camera Devices for the Next
Generation Hen Farms



AIMHiGH – AI/ML Enabled by HPC for Edge Camera Devices for the Next Generation Hen Farms

FF4EuroHPC application experiments



The project in numbers: Aim:

Nr. of partners: 5
Duration: 15 months
Start date: May 2021
End date: August 2022

This innovative project proposes the use of HPC and deep learning AI to create prediction models that can be deployed on the edge devices equipped with camera sensors for the use in IoT/AI solutions in the poultry sector.

