Stage voor de opleiding Master Informatica

Titel: Software engineering stage

Gegevens bedrijf:
Naam: Barco NV
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Adres waar de student zal werken: Beneluxpark 21, Kortrijk

Kort (min 90 uur) of lang (180 uur): ~~kort /~~ **lang**

Korte beschrijving van de opdracht:

The Barco Labs Healthcare team is the Barco's innovation group focusing specifically on the healthcare domain. We are exploring new concepts and new business ideas before they are turned into real products. One of these projects explores the possibilities of Digital Pathology, in this project there are three possible topics for an internship.

Option 1: Software engineering

In this option you will be added to a dynamic scrum team where an initial proof of concept is being built. The team maintains an application consisting out of a frontend (Angular), backend (TypeScript & serverless in AWS) and an on-premise component (TypeScript, Python in Docker Swarm housing our AI models). This all combined with state-of-the-art Github based CI/CD and IaC. During your internship you will be part of the team, participate in scrum rituals, peer reviews, … and carry out some development tasks autonomously.

Option 2: Confidential computing

Deploying AI/ML models inside a 'hostile' environment (e.g. in a public cloud provider or inside a customer's datacenter) is easier said than done. As soon as a model is running outside a trusted environment, and the model parameters are up for grabs your IP is gone. In this internship the goal is to explore the current state of the confidential computing ecosystem (e.g. attestation, confidential containers, …) and devise a means in which models can be protected. The confidential computing ecosystem is still relatively new and there is a need to investigate the possibilities and limitations.

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Option 3: GPU benchmarking

ML models are making use of hardware accelerators like GPUs, TPUs, … in this internship the goals is asses how our ML models behave on different GPUs microarchitectures and types and how customers infrastructure need to be dimensioned when a given workflow is envisioned. During this internship some benchmarking will be performed, and a measurement methodology will be devised to help define the number of resources required to meet certain performance. This will mainly focus on the NVIDIA ecosystem (TensorRT, Nsight, …) in addition to Python and generic Linux system observability.