

Optimize Your Code

Intro to Profiling for HPC & AI Applications

December 11, 2024

Speakers:

Christodoulos Stylianou, Research Engineer, The Cyprus Institute (Cyl)

Giorgos Kosta, Research Engineer, Cyl

Spiros Millas, Research Engineer, Cyl



A Bit About Myself



- Research Engineer at CaSToRC, PhD
- *Training and Skills Development* Task Leader for EuroCC2
- Area of expertise in High Performance Computing (HPC)
- HPC x AI
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- EuroCC is a part of the pan-European project **EuroHPC Joint Undertaking**, involving >30 countries
- Aims:
 - identify and address the skills gaps in the European HPC and HPDA ecosystem
 - coordinate cooperation across Europe to ensure a consistent skills base
- CaSToRC: **National Competence Centre** (NCC) in HPC
- NCC since 2020, now in its second 3-year phase.

More info: <https://castorc.cyi.ac.cy/national-hpc-competence-centre>



Activities of **EuroCC2** for Cyprus NCC:

- Liaise with local computational communities
- Identify main needs in computational communities
- Provide tailored training activities



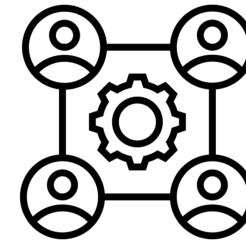
Consultation

- **Short-term** collaboration (1-2 months)
- **Code inspection**
- **Suggestion** of parallelization strategies
- **Suggestion** of potential machine learning models applicable to your problem



Resource provision

- You can apply for a competitive project to use Cyl's HPC facility.
- Your team usually working on your projects
- The centre can support you on the infrastructure



Training

- Monthly events open to Public, Academia and Industry.
- Tailored training events to industry about tools & technologies.



Agenda



Title	Presenter	Time
Profiling Basics: Understanding Metrics and Tools for HPC	Dr Christodoulos Stylianou	10:00 – 10:30
Profiling AI Applications	Mr Giorgos Kosta	10:30 – 11:00
Scaling Up: Multi-GPU Parallelism for AI Models	Mr Spiros Millas	11:00 – 11:30
Break		
Hands-On Session: Profiling for AI Applications		12:00 – 14:00



Thank you for the attention!



More information:



<https://castorc.cyi.ac.cy/>
<https://eurocc.cyi.ac.cy/>



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EuroHPC
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