

Vangelis Kourlitis PhD

Data Science | Simulation Software | ex-CERN

PROFILE

Data scientist and software developer with 10 years experience in various technical projects and leadership positions at CERN. Specialized in developing scalable data science and machine learning pipelines, with a proven track record of optimizing particle simulation software and delivering impactful, data-driven solutions. Skilled leader with extensive experience mentoring teams, presenting complex results to diverse audiences, and authoring and reviewing technical reports. Now seeking to transition into industry to apply advanced technical expertise to commercial challenges.

CONTACT

Email: kourlitisV@hotmail.com

Tel: +30 6949552002

LinkedIn: vangelis-kourlitis

GitHub: ekourlit

SKILLS

Advanced

Python • C++ • Git

Intermediate

Unix • HTCondor • Slurm • VTune

Novice

Docker • GCP • AWS • SQL •
OpenMP • CUDA

EDUCATION

UNIVERSITY OF SHEFFIELD

PhD in Physics

2015 - 2019 | Sheffield, UK

ARISTOTLE UNIVERSITY OF THESSALONIKI

B.Sc. in Physics

2009 - 2015 | Thessaloniki, GR

EXPERIENCE

TECHNICAL UNIVERSITY OF MUNICH & CERN | Geneva, CH Analysis Model Group Coordinator

Oct 2023 - Dec 2024

- Managed a geographically distributed 120-member group overseeing data analysis software (~1M LOC) and data formats; applied Agile methodologies to ensure project milestones aligned with organizational goals.
- Drove the adoption of a lightweight data format ahead of schedule, offering 3x reduction in data storage costs.
- Introduced high-performance scientific Python tools, significantly enhancing user experience and accelerating insights extraction.
- Planned and mentored early-career developers projects, delivering innovative software products on time and fostering professional growth.

Data Science Researcher

Mar 2023 - Sept 2023

- Awarded 40k € grant to lead a 10-member team to modernize legacy C++ data analysis tools with scalable array-based implementations, achieving 4x higher throughput and aligning with industry data science standards.

Python libraries: Awkward, Dask, Numba, CuPy

ARGONNE NATIONAL LABORATORY | Chicago, US

Data Science Researcher

Nov 2019 - Feb 2023

- Identified bottlenecks and optimized large-scale C++ Monte Carlo particle simulations, doubling processing speed through computational improvements. Prototyped computer vision solution for up to 20% additional simulation acceleration.
- Streamlined HPC workflows for particle simulation, ML optimization, and statistical analysis, cutting time-to-insight from days to hours.
- Led a team of 7 researchers in applying advanced analysis algorithms and ML for complex data classification, increasing experimental reach by 12%.
- Benchmarked emerging hardware accelerators for training ML models in anomaly detection, achieving tenfold increase in throughput.
- Facilitated collaboration among 10 international teams by establishing and documenting standardized methodologies for robust AI-driven results.

Python libraries: PyTorch, MLflow, Ray, PySpark

UNIVERSITY OF SHEFFIELD | Sheffield, UK

Doctoral Researcher

Nov 2015 - Oct 2019

- Authored the first technical report at CERN to publicly release a complete statistical model, setting a precedent for reinterpretation and transparency in the field.
- Developed and maintained C++ data analysis software for high-throughput computations across the full development lifecycle.
- Taught Python programming and scientific computing to MSc students through hands-on lab sessions.

Python libraries: NumPy, pandas, SciPy, scikit-learn