Dr. Constantinos Katsamis

connoskats@gmail.com
EU National (Greek Cypriot)/ EU settled status
+447761947119/+35799976688
https://www.linkedin.com/in/dr-constantinos-katsamis-819445144/

Education

01/2018-/01/2022 The University of Manchester: Ph.D in Mechanical Engineering Aii-minor corrections

- Thesis title: **"CFD (Computational Fluid Dynamics) Modelling of Passive Cooling Natural Circulation Loops".**
- Funded by Department of Mechanical, Aerospace and Civil Engineering **BEACON Scholarship** and **EDF Energy**.
- Developed strong research and analytical skills through conducting numerical simulations that actively contributed to research project goals and collaborated closely with EDF UK R&D team.
- Investigated and developed understanding of turbulence modelling (U/RANS & LES) and heat transfer phenomena in flows closely related to the cooling loops of forthcoming generation of nuclear reactors. Fulfilled the research objectives within timelines (thesis, publishing scientific papers).
- Strengthened communication skills through presenting in national, international conferences and SIG workshops (10 in total).
- Enhanced coding skills in F90 and C/C++ through developing wall function in *Code_Saturne* CFD tool (open-source).

09/2015 – 06/2017 University of Cyprus: M.Sc. in Mechanical and Manufacturing Engineering GPA: 8.07 /10

- **Indicative courses:** Advanced Engineering Thermodynamics, Technologies of Renewable Energy, Numerical Methods.
- Collaborate effectively with peers for coding the numerical solution of canonical flow problems in F90 within the course of Computational Fluid Mechanics and perform thermodynamic cycle optimization in Matlab.
- Thesis title: **"Thermal management of High Concentrated Photovoltaic" (Distinction).**
    - Mastered ANSYS FLUENT and UDF scripting for flow simulations of advanced concentrated photovoltaics. Developed strong numeracy, problem solving and analytical skills for interpreting the data and design optimization.

09/2012 – 06/2015 The University of Manchester: BEng (Hons) in Mechanical Engineering 1:1-First Class

- **Awards:** First Class rank achieved for second year (74.4%) and accomplished **Top 5 Student Award** during the First year (81.1%).
- **Indicative Modules:** Engineering Mathematics, Fluid Mechanics, Thermodynamics, Dynamics, Modelling and Simulation, Design, Numerical Methods, Project Management, Control Engineering, Heat transfer, Operations Management, Renewable Energy Systems.
- Thesis title: **"Use of flow around buildings for energy generation" (74%)**
    - Conducted wind tunnel experiments to assess the effects of incorporating wind turbines on residential house' roofs. Enriched design skills using CAD tools and 3D printing to optimize the models' design and interpreted the data generated.

09/2003 – 06/2010 American Academy Larnaca, Cyprus (Private Institution) GPA: 95.83%

- **Awards:** Honor's list for 6 consecutive years, The Pure and Mechanics Mathematics Prize.
- A-level GCEs Qualifications: Greek (A), Physics (B), Maths (A), Accounting (A), Computing AS.
- O-level GCSEs Qualifications: English (B), German (A), Additional Science (A*), Mathematics (A), Religious Studies (A*).

Work and research experience

09/2023 –present Research Engineer- Thermal Hydraulics – EDF R&D UK

- Experienced in computational fluid dynamics, turbulence modelling and project engineering in consultancy, supporting the safe operation and design of EDF AGR fled and advanced reactors. Led projects and developed advanced numerical models for simulating forced, natural, mixed convection flows with conjugate heat transfer and porous media.
- Experienced in code development in many programming languages to implement new features and analysing of the data.
- Support the broader use of Code_Saturne, EDF's in-house tool within the department, and acted as a liaison between EDF R&D teams in both UK and France.

04/2022 –09/2023 Research IT – Research Computing Platforms Support Unit- The University of Manchester

- Experienced on the High Performance Computing (HPC), High Throughput Computing and Research Data Storage platforms. In depth knowledge of the Linux Operating system and administration. Developed strong analytical thinking and problem-solving skills through

correcting malfunctions, performed software installations, broaden understanding of a range of software through debugging codes including artificial intelligence and machine learning.

- Extend code level experience through developing tools in Bash and Python to automate tasks and enhanced knowledge on accelerating machine learning applications on Nvidia GPU (engaged with a research CFD project on active flow control with Deep Reinforcement learning and use of Artificial Intelligence using ANSYS/Cuda/Python/tensorFlow/, participated in 17th ERCOFTAC workshop in which I developed CFD models for cooling of automobile's engine).
- Delivered training on using HPC, products and services to researchers across the University. Collaborated with Research Software Engineers and developed training material to support teaching of CFD and data science using jupyter-notebook, Code_Saturne, Openfoam, git. Enhanced conceptual thinking by supporting researchers in running applications on HPC.

09/2018 –03/2022 Graduate Teaching Assistant at The University of Manchester

- Instructed the main principles of Fluid Mechanics to 20 1st year undergraduates using fluid flow visualization experiments.
- Organized and demonstrated practical Computation Fluid Dynamics and Advanced Thermodynamics both lab (jet engine, IC engine) and tutorial sessions for 2nd, 3rd year and MSc students (20-80), assisted them to interpret correctly the data generated and troubleshoot the software (ANSYS Fluent | MATLAB).
- Developed leadership skills by co-supervising MSc/final year students who successfully fulfilled their project requirements.

07/2021-01/2022 CFD researcher at Modelling and Simulation UK Centre (EDF Energy)

- Provided consultation on the effects of turbulent forced convection in the cooling fluid passages on deformed graphite bricks to support the safe operation of Advanced Gas Cooled Reactors. Conducted 3-D RANS simulations to analyse the effects of debris in fluid passages and utilise high-performance computing.
- Strengthened programming skills by implementing PID control algorithm in EDF's in-house CFD code (Code_Saturne).
- Developed CAD skills through optimisation of model geometry in EDF's open-source tool (Salome).
- Enhanced time management skills to fulfill the deliverables and objectives of the project (report, poster, presentations).

09/2015 -06/2017 Teacher Assistant for the course of Thermal Engines at the University of Cyprus

- Tutored 35 undergraduates for 2 semesters, 2 hours per week. Organised, solved, and effectively presented the course material.
- Provided additional support and mentored undergraduates with disabilities.
- Ensure smooth running of the lab session per semester and marked the lab assignments.

01/2016 – 07/2016 Graduate Trainee - Electromechanical Sector in Cyprus - Ministry of Transport, Communications and Work

- Designed and involved in the consultation of the building services. Developed awareness and knowledge of engineering systems and their operation including heat recovery units, heat pumps, air handling units and solar collectors.
- Strengthened numerical and analytical skills for evaluating the heating/cooling loads in accordance with standard norms (ASHRAE/CIBSE) and eextended knowledge in Heating Ventilation and Air conditioning by visiting and inspecting sites.
- Acquired experience in preparing quotations and energy classification for nearly zero energy buildings using Eco Engine 2.

07/2010 – 07/2012 Infantry Sergeant for Light Weight Weapons, Cyprus National Guard

- Honorary diploma for contribution to the armed forces. Acted as trainee for new recruits and scheduled the daily shifts.

Skills and Interests

- **Language**: English (Fluent) | Greek (Native) | German (Basic)
- **Engineering software:** CFD tools (Ansys Fluent, StarCCM+ etc.)| CAD tools (Salome, Solidworks, AutoCad) | Matlab | GH-Bladed (Wind turbines design) | Paraview (Visualisation) | CNC Simulator coding | 3D-printing (Cura, Makeware)
- **Operating systems**: Windows | LINUX (Centos 7, Scientific Linux, Ubuntu, Arch, Mint, Fedora, Debian).
- **Programming Languages**: FORTRAN F90 (code development and basic MPI knowledge) | Python (Functional and OPP) | C/C++ | Git/Github | Bash | $LATEX$ (thesis and publications) | WordPress | CSS/Javascript/HTML (website development).
- MS Office 365: MS Word, MS PowerPoint, MS Excel, MS Teams (Certificate European Computer Literacy Qualification).
- Institution of Engineering and Technology (IET) member | Associate Member in Cyprus Scientific and Technical Chamber.
- Associate Fellow of the Higher Education Academy / Reviewer for Computer and Fluids Journal (Elsevier).
- Participated in High Performance Computing and Large Eddy Simulation training at Barcelona Supercomputing Centre.
- Enjoyed learning through mini-projects including 3-D printing, Raspberry-Pi programming arcade games in C/C++.