Antonis Tzanetakis

Mechanical Engineer
Athens, Greece
antonis.tzanet@gmail.com
+30 6949788564 — LinkedIn Profile — GitHub Profile

Objective

A recent Mechanical Engineering graduate with interests in Energy Systems, Computational Methods and Data-driven Methods. Seeking to leverage my technical skills while gaining new knowledge in an engineering role. Eager to explore and contribute to innovative solutions across diverse sectors, while collaborating in interdisciplinary teams.

Education

Integrated Master's Degree in Mechanical Engineering
National Technical University of Athens, Greece
Graduation Year: 2024
Grade: 7.94/10
Relevant coursework: Computational Methods, Renewable Energy Systems, Control Systems

Skills

- **Programming Languages:** Python, MATLAB, FORTRAN

- **Tools and Frameworks:** TensorFlow 2.x, Keras for TF,
  SOLIDWORKS, Microsoft Office, Git/GitHub
  E.A.SY (optimization software by PCOpt Unit in NTUA),

- **Other Skills:** Technical writing, Data-driven methods, Software Engineering basics

Relevant Projects

Thesis: Assessment of Hybrid Computational Fluid Dynamics-Deep Learning Solvers for Unsteady Problems
Programmed and evaluated two hybrid CFD-DL approaches which can accelerate the solution of unsteady problems. The discretization error, which is heavily dependent on the grid step size, is an important source of error in numerical simulations and is what these methods aim to address. These hybrid solvers run on a coarse grid but produce solutions corresponding to much finer grids by utilizing Artificial Neural Networks (ANNs) trained on high resolution data.

Applications of Linear & Kernel Principal Component Analysis in CFD
Compressed the primal fields, required for integration of the adjoint equations in the unsteady adjoint method, through implementation of the methods of Linear PCA (LPCA) and Kernel PCA (KPCA). Their qualitative features and performance were compared in two cases: a flow past one and a flow past two cylinders.

Wind Energy Project
Processed wind data, observed effect of different capabilities for wind turbines, techno-economically evaluated and proposed a Wind Energy project for a given isolated system.
Included optimization of spatial placement of wind turbines in the wind farm, utilizing basic scripting and the E.A.SY software.

Certifications

Certificate of Proficiency in English, University of Michigan, 2013
Diplôme d'études en langue française (DELF) B2, French Ministry of National Education, 2014