

Yannis Kallinderis - Biographical Note

1. Degrees

- National Technical University of Athens:
Diploma in Mechanical Engineering
- Massachusetts Institute of Technology (MIT):
PhD in Aeronautics and Astronautics

2. Academic Positions

- University of Patras: *Professor*
- University of Texas: *Professor*
- Swiss Federal Institute of Technology Zurich (ETH): *Visiting Professor*
- Massachusetts Institute of Technology (MIT): *Visiting Professor*

3. Research Fields

- Development and application of numerical methods in fluid mechanics, focusing on aerodynamics.
- Analysis, estimation, and control of errors for flow field simulations.
- Methods for generation of hybrid grids for complex flow fields and geometries.
- Fluid - structure interaction with emphasis on oscillations due to dynamic flow loads.
- Development and application of Artificial Intelligence methods for the (i) simulation of flow fields and (ii) preliminary design of air vehicles.

4. Contributions to the field of Computational Fluid Dynamics (CFD)

- Pioneered use of *adaptive* numerical schemes and *grid adaptation* methods for viscous flow simulations.
- Pioneer in grid generation employing semi-structured *prismatic* elements for the boundary layer region of complex geometries.

- Pioneered use of *hybrid* grids for flow field simulations involving complex geometries.
- Among the first to use CFD methods for fluid-structure interaction applications of vortex induced vibrations on offshore structures.
- Large scale computations for design / optimization of complex Mechanical and Aeronautical systems.

5. Contributions to Applications of Mechanical Engineering and Aeronautics

- Aerodynamic design of air vehicles
- Aerodynamics of turbomachinery blades
- Design of blade cooling systems for thermal turbomachines
- Study of methods for suppressing movements of offshore structures subjected to ocean currents and waves

6. Academic Honors and Awards

- *Lawrence Sperry Award* from the American Institute of Aeronautics and Astronautics
"For work that has led to orders of magnitude improvements in efficiency of computational fluid dynamics and help in tremendously improving our ability to carry out large-scale simulations"
- *Minisymposium in Honor of Prof. Yannis Kallinderis's 60th Birthday:* Progress of Unstructured grid based CFD, Hybrid mesh generation and Adaptation, and Parallel Supercomputing.
16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics, July 21-26, 2024, Vancouver, Canada
- Journal of the American Institute of Aeronautics and Astronautics: *Associate Editor (6 years)*
- Two *early promotions* up to the rank of *Professor* at the University of Texas
- American Institute of Aeronautics and Astronautics: *Associate Fellow*

7. Teaching Experience (undergraduate and postgraduate courses)

- Aerodynamics
- Fluid Dynamics

- Preliminary Design of Air Vehicles
- Propulsion in Aeronautics

- Computational Fluid Dynamics – Aerodynamics
- Computational Methods for Differential Equations.