Ioannis Nikiforakis, Ph.D.

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Mechanical engineer with a strong background in internal combustion engines, wind turbines and energy-efficient buildings. I am experienced in computationally implementing applied thermodynamics, heat transfer analysis, computational fluid dynamics, combustion kinetics, stress-strain analysis and fatigue damage determination. I want to make an impact through novel, meaningful work in a fast-paced environment.

Experience

01/2025 - Present	*Visiting Scholar-Stony Brook University* Modeling internal combustion engines and wind turbines in Stony Brook University's Advanced Combustion and Energy Systems Lab, under Professor Dimitris Assanis.
05/2022-12/2024 & 05/2021-08/2021 & 05/2018-12/2020	*Research Assistant-SUNY Research Foundation* Worked in projects between Stony Brook University, private corporations, and the US Government. My research involved the wake investigation of an offshore wind farm and the integration of on-site hydrogen production through PEM electrolyzers (Ørsted). Additionally, I modeled a rotary engine with a pre-chamber (UAV) to optimize performance under various loads (LiquidPiston, Inc. and US Air Force). Further work included the hybridization of solid oxide fuel cells with engines and the assessment of the operating conditions to optimize those designs (ARPA-E's INTEGRATE, Czero, Inc.).
08/2021-05/2022 & 01/2021-05/2021 & 08/2017-05/2018	*Teaching Assistant-Stony Brook University* Assisted in Mechanical Engineering Undergraduate Program Courses: MEC 301 Thermodynamics, MEC 305 Heat & Mass Transfer, MEC 325 Manufacturing Processes, MEC 364 Introduction to Fluid Mechanics, MEC 393 Engineering Fluid Mechanics, and MEC 398 Thermodynamics II. I was involved in lectures, recitations, lab work, projects, homework and exams.
06/2013-08/2013 & 06/2012-08/2012	*Intern-HARAMIS BROS S.A.* Interned as a mechanical engineer in a Greek water-pump manufacturing company, where I was involved in the sizing and procurement of the required equipment.

Education

Ph.D. in Mechanical Engineering, Stony Brook University, 2024
Dissertation: Understanding the Role of the Internal Combustion Engine for a Hybrid Solid Oxide Fuel Cell Power Generation System

M.Sc. in Sustainable Energy Technology, Delft University of Technology, 2017
Thesis: Determination of Fatigue Assessment of Monopile–Based Offshore Wind Turbines through Fidelity Quantification

Diploma in Mechanical Engineering, National Technical University of Athens, 2014
Thesis: Net-Zero Energy Buildings: A Full Review

Skills

Expert in CONVERGE CFD, Tecplot, ANSYS Chemkin, Fluent, SpaceClaim, EnSight, ParaView, AutoCAD, Aspen Plus, SolidWorks, Microsoft 365, LaTeX, MATLAB, Python, C/C++
Fluent in English, Greek and French | Conversational in Dutch and Chinese (Mandarin)

Publications in Refereed Journals, Conference Proceedings and Awards

Lead author in 3 publications. Awarded the Gerondelis Foundation Graduate Study Scholarship & the Institute for Advanced Computational Science Young Writer's Award.