Nikoletta Hadjihambi

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EDUCATION

Oct. 2021 - Jul. 2023 **MSc on Computational and Applied Mathematics**
Specialization: Scientific Computing
University of Crete
Department of Mathematics and Applied Mathematics
Link to website

Nov. 2020 - Mar. 2021 **Learning Python Programming Masterclass**
Udemy, Online courses
Link to website

Sept. 2016 - Nov. 2020 **BSc on Mathematics**
Aristotle University of Thessaloniki
Department of Mathematics
Grade: 7,68
Link to website

TEACHING EXPERIENCE

Feb. 2023 - Jun. 2023 **Teaching Assistant for undergraduate course "Numerical Analysis"**
University of Crete, Department of Mathematics and Applied Mathematics

- Teaching Assistant in the Lab for "Numerical Analysis".
- Tutoring students in completing laboratory exercises using the Python programming language.

Oct. 2022 - Jan. 2023 **Teaching Assistant for undergraduate course "Numerical methods for solving ODE's"**
University of Crete, Department of Mathematics and Applied Mathematics

- Teaching Assistant in the Lab for "Numerical methods for solving ODE's".
- Tutoring students in completing laboratory exercises using the Python programming language.

Feb. 2022 - Jun. 2022 **Teaching Assistant for undergraduate course "Linear Algebra I"**
University of Crete, Department of Mathematics and Applied Mathematics

- Tutoring students in completing exercises.

PROJECTS

- **Master Thesis**
  Oct. 2022 - Jun. 2023
  Title*: Direct and Iterative Methods for Large Sparse Linear Systems*
  In this thesis presented an overview of direct and iterative methods for solving large sparse linear systems such as $Ax = b$ where $A \in C^{n \times n}$ and $b \in C^n$. When discretizing partial differential equations, we often end up with a system of linear equations in the form $Ax = b$, where A is a, generally, sparse matrix, and b is a known vector. Direct and iterative methods offer solutions for solving this type of linear systems. In this thesis, I placed emphasis on Stationary (like Jacobi, Gauss-Seidel, SOR) and Non-stationary (like Steepest descent method, Conjugate gradient method, GMRES, BiCG, BiCGSTAB) iterative methods. In the last chapter, using the aforementioned theory, I solved the Helmholtz equation using some of these methods in the Python programming language.

- **Project of the graduate course "Mathematical Modeling"**
  Apr. 2022 - Jun. 2022
  Title***: Natural boundary conditions of problems in Calculus of Variation***
  The main purpose of this project is to find the natural boundary conditions of problems that come from the field of Calculus of Variations. By briefly presenting the theory of boundary conditions, it becomes an application to a problem of magnetic materials.

- **Project of the undergraduate course "Modern Control Theory"**
  Mar. 2020 - Jun. 2020
  Title***: Laplace and Inverse Laplace Tranformation: Their applications in solving state space systems***
  An introduction to Laplace Transformation and Inverse Laplace Transformation followed by examples. In addition, it presents the process of solving continuous systems in state space followed by examples using MatLab.

RESEARCH INTERESTS

- Numerical Analysis
- Numerical Linear Algebra
- Iterative methods for system solution

SKILLS

- **Programming:** Python, Fortran, MatLab, R
- **Document Processing Software:** LaTex, Microsoft Office (Word, Excel, Powerpoint)

SCHOLARSHIPS

- **ELKE Scholarship:** Supporting educational activities at the University of Crete, by incorporating remedial teaching in addition to the main lectures for the spring semester of the academic year 2021-2022.
- **"Maria Michael Manassaki" Scholarship**

LANGUAGES

- English (C2 / International General Certificate of Secondary Education - Cambridge)
- Spanish (B1)
- Greek (native)