



Zisos Mitros, PhD

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Date of Birth: 10.10.1992 — Residence Permit: B

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OVERVIEW

- Development Engineer specializing in robotics and mechatronics for the semiconductor industry
- PhD in Surgical Robotics and Minimally Invasive Surgeries (MIS)
- Proven management and team leadership skills in robotics projects
- Expertise in Mechanical Design, Mathematical Modeling, & Systems Integration for mechatronic systems
- Skilled in collaborative communication through written, verbal, and visual formats
- Team-oriented personality with leading skills, able to work independently and as a member of a team

WORK EXPERIENCE

Mechatronics Development Engineer

Beyond Gravity

July 2024 - now

Zurich, Switzerland

- Leading the execution of development work packages assigned by System Engineer and Project Manager
- Supporting specification engineering involving the customer
- Concept generation, system analysis, architecture trade-offs of mechatronics systems using mathematical models or simulation tools
- Defining and testing prototypes
- Establishing and reviewing technical documentation
- Estimating of technical effort

Test Engineer

Beyond Gravity

March 2022 - July 2024

Zurich, Switzerland

- Led mechatronic device test campaigns and debugged test equipment and software
- Conducted system modeling for a 9 Degree of Freedom mechanical system in the semiconductor industry
- Planned and executed development, qualification, and acceptance testing for complex mechanisms
- Prepared documents, test reports, and presented test results to internal and external stakeholders
- Conducted controls and dynamics analysis for a project, examining system behavior and performance.
- Responsible for the mechatronics development of a robotics inspection prototype & guiding younger engineers.

Mechanical Engineer - PhD Candidate

University College London - King's College London

Sept 2017 - Feb. 2022

London, UK

- Designed and manufactured a multi-arm snake robot for Minimally Invasive Surgeries using SolidWorks and various fabrication methods (3D printing, CNC machines, electronics)
- Conducted mathematical modeling in Matlab and Python for a flexible continuum robot with coupled mechanics
- End-to-end design in SolidWorks and Matlab modeling for a hybrid actuated continuum robot
- Applied optimization methods in Matlab for the control of continuum robots
- Conducted experimental analysis on developed surgical robots
- Contributed SolidWorks design elements to a surgical robot for intraocular interventions
- Supervised and led multiple undergraduate students
- Documented protocols for robot development and machine usage (work instructions)

Postgraduate Teaching Assistant (PGTA) - Mentoring

Oct 2018 - Feb. 2022

University College London - King's College London

London, UK

- Engineering Challenges I & II 2018-2019: Facilitating during the course, Marking exam papers
- Design of Manufacture 2018: Teaching design elements, electronics and helping students into designing their prototypes. Marking design solutions
- How to Change the World 2019: Facilitating during the course providing mechanical engineering expertise, Examining project's solution
- Medical Robotics: Theory & Applications 2021: Leading the tutorial part of the module, preparation of coursework

Research Assistant (RA)

Sept 2019 - Dec 2019

University of Edinburgh

Edinburgh, UK

- Designed in SolidWorks and modeled in Matlab a novel continuum robot for thoracic interventions
- Controlled the robot using CAN BUS protocol

Development Engineer

Feb 2017 - Sept 2017

National Technical University of Athens, Control Systems Lab





Athens, Greece

- Project's Title: "Control and Management of Robotics for Active Debris Removal"
- Contributed to the design of several critical design elements and the execution of the required experiments
- Finite element analysis (FEA) of several components under various stress conditions
- Responsible for the documentation of the results and presentation to the European Space Agency (ESA)
- Designed in Matlab a novel impedance controller for landing mechanisms

EDUCATION

- **University College London (UCL)** Sept 2017 - Feb 2022
Ph.D. in Robotics
PhD Title: "Design and Modelling of Multi-Arm Continuum Robots"
Supervisor: Prof. Christos Bergeles
- **National Technical University of Athens (NTUA)** Oct 2010 - Jul 2016
M.Sc. Mechanical Engineering
Mechanical Design specialization
Thesis: "Analysis, Dynamics and Control of Robotic System for Docking to Orbital Space Systems"
Supervisor: Prof. Evangelos Papadopoulos

SKILLS

- Languages:  English (Fluent),  German (Beginner),  French (Beginner),  Greek (Native)
- Programming: Matlab/Simulink, Git, Python (beginner)
- Design Software: Solidworks – SolidCam, ANSYS Mechanical
- Other Software: Wolfram Mathematica, LaTeX, Various 3D printing softwares, CNC machines

PUBLICATIONS AND AWARDS

- **First Author:** 6 Peer-Reviewed Conference Papers, 3 Journal Papers, 1 Abstract Based Paper, 3 Peer-Reviewed Workshop Papers
- **Co-Author:** 1 Peer-Reviewed Conference Paper, 3 Journal Papers
- **Awards:** IMechE-Runner up, MESROB2021-Bronze Award, 3 times awarded with the Thomaidion Award for scientific publication

ONLINE COURSES

- **In progress:** Google Project Management: Professional Certificate.