Alexandros Charitonidis *Junior Mechatronics Engineer*

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Summary

I am a recent graduate from University of Glasgow with a Mechatronics Engineering degree equipped with a broad skill-set covering important facets of the mechatronics branch.

During my undergraduate degree, I have successfully completed multiple projects involving mechanical and mechatronic systems for the optimisation of electric vehicles and automotive electronics (EVAEL research lab). Besides, I had the opportunity to develop a variety of skills which finally led me to the fulfilment of my internship as a laboratory assistant.

My research master dissertation involved the study of capacitive tactile sensors with state-of-the-art materials for e-skin applications. Despite the technical skills I have acquired, the whole process allowed me to work with the Bendable Electronics and Sensing Technologies group on various custom made additive manufacturing technologies.

I have strong expertise in embedded hardware and fueled by my curiosity, I am eager to continuously progress my skills and explore all aspects of engineering.

Experience

CERCA Abroad | International Hellenic University Thessaloniki, Greece

Academic & Student Services Coordinator *Jun '22 – Today*

Coordinated the Engineering Internships for a study abroad program:

- Provided guidance and taught undergraduate and postgraduate students the field of drone development.
- Supported student with different engineering background from various universities in the world.
- Provided administrative and social support to the interns on a daily basis throughout their internship period.
- Created and effectively delivered a curriculum for drone engineering including frame construction with additive manufacturing technologies, drone assembly and electronics, flight controller programming and autonomous flying.

SMARTSEA MSc | International Hellenic University Hybrid Teaching Model - Thessaloniki, Greece

Teacher - Researcher *Aug '21 – Jul '22*

Teaching and research work on ROUVs as a member of the teaching staff including:

- Curated academic lecture notes involving electric systems on Remotely Operated Underwater vehicles (ROUV) and created a laboratory course on Data Acquisition and Sensors.
- Taught a cohort of professionals and graduates on three courses on postgraduate level, through an interactive hybrid learning platform. Additionally, laboratory course that were performed on-site included LabView training with myRio controllers and compactRio DAQ systems.
- Researched and implemented a sensors cluster for water quality monitoring embedded on the existing control system of the ROUV. Real-time monitoring through a Graphical User Interface created in Python through the QT framework. Additive manufacturing technologies were used for the cluster.
- Supervised an undergraduate thesis on seawater quality monitoring and created 3D models including technical drawings. These include various parts of the vessel and the sensor cluster itself.

EDRIVE TOUR | International Hellenic University Thessaloniki, Greece

Teacher - Researcher *Aug '21 – Jul '22*

Teaching duties on vehicle electrification and energy storage systems including:

- Taught undergraduate and postgraduate students, courses related with lightweight materials, demonstrating vacuum forming of carbon fibers for various fairings of automotive parts.Advance manufacturing techniques were explored and taught.
- Researched and implemented a sensors cluster for water quality monitoring embedded on the existing control system of the ROUV. Real-time monitoring through a Graphical user interface created in python through the QT framework. Additive manufacturing technologies were used for the cluster.
- Led on the upgrade and maintenance (within a team of undergrad and postgrad students) of electrically-assisted tricycles, Underwater ROV and Electrified Go-Kart.

International Hellenic University | EVAEL Thessaloniki, Greece

Laboratory Intern *Apr '17 – Nov '17*

Performed duties in the premises of the Electric Vehicles and Automotive Electronics Laboratory (EVAEL) including:

- Supervision and design of the laboratory's renovation.
- Technical and educational assistance on laboratory courses involving vehicle electrification.
- Carried out day-to-day administrative duties accurately and efficiently.
- Led on the upgrade and maintenance of electrically-assisted tricycle, Underwater ROV and Electric Kart.

Education

University of Glasgow Glasgow, United Kingdom

Masters degree in Mechatronics, MSc *2019 – 2020*

Focused on Analogue and Digital Control, Digital Signal Processing and Real-Time Embedded Programming. The latter were applied on multiple programming and electronics projects on individual and group level. Through my thesis I researched and modelled state-of-the-art materials used in tactile sensors for artificial fingertips.

Additionally, I expanded my knowledge on Advanced Manufacturing and worked on projects requiring Fault, Detection, Isolation and Reconfiguration through FMEA analysis and root cause analysis.

International Hellenic University Thessaloniki, Greece

Bachelors degree in Automotive Engineering, BSc(Hons) *2012 - 2019*

Emphasis in Automotive Electronics, Basic Electronics and Mechatronics. Technical drawing; including CAD and ECAD Softwares. My final year project which involved the development of Li-ion battery pack for the conversion of a bike to an ebike was published in a conference.

Skills

Technical specialties: Hardware design and implementation, with(in) a team. Expertise in micro-soldering with experience using stereoscopes. Can create and maintain detailed technical documentations.

Some of the programming languages that I have extensively worked with include:
| Python/C++/C/MATLAB/ Javascript.
I am a certified Solidworks Professional on mechanical design and familiar with the following software
| CAD and ECAD: SolidWorks, Autocad, Altium Designer, Eagle, Cadence
| Simulation: COMSOL, Solidworks Flow,Solidworks Simulation

Natural languages: Greek (*native*), English (*full professional proficiency*), Turkish (*full professional proficiency*).

Certifications

Solidworks Professional - Mechanical Design

Issued On: 02/02/2021
Certificate ID: C-MXNZFY8RTC
Issued By: VirtualTester Online, Tangix Design Development AB
Relevant skills:

- *Drawing Tools | C-SY52DPLA69 | 02/04/2021*

- *Sheet Metals | C-NYTPWA3B7S | 13/07/2022*

Arduino Certification - Electronics and Physical Computing
Issued On: 24/06/2021
Certificate ID: 63a28918-202b-4e33-9792-b29842cc7881
Issued By: Arduino Education Team

Publications

A. Charitonidis, D. Tziourtzioumis, K. Kravari, and T. Kosmanis, "Marine Surveying Education by Implementing Artificial Intelligence on Remotely Operated Underwater Vehicle Sensors" Lecture Notes in Networks and Systems, 2022, 332, pp. 110-119.

A. Charitonidis, F. Athanasiadis, A. Manolas, and T. Kosmanis, "Development and modeling of a battery system for commercial electric bicycles," in Transport Means - Proceedings of the International Conference, 2019, vol. 2019-Octob, pp. 326–329.