# ZOE PAPAGIANNI

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## WORK EXPERIENCE

### Research Analyst

*Box Media | London, UK.*                                                                                          *04/2020 − 05/2022*

- Collected data from clients and online sources and used it for analysis, financial projections, and forecasting.
- Presented results to the team and wrote requested executive summary detailing strategy to present to clients and senior leadership.
- Worked on the development of a Data Analytics course covering core concepts, applications, and techniques and ensured technical accuracy.
- Worked on Calculus project and created content upon the subjects of limits, derivatives and integrals.

### Junior Developer

*Tether Technologies | London, UK.*                                                                                *10/2019 − 04/2020*

- Utilized Python (OpenCV) to optimise the motion tracking system used for event detection in live video footage of surveillance cameras.
- Extracted images from footage and used machine vision techniques and transformations (such as foreground and background segmentation, differentiation etc.) for motion detection.
- Worked on the research of an appropriate object detection method (as Histograms of Oriented Gradients (HOG)) to expand our system capabilities.
- Assisted in the front-back web development and deployment of software into servers using Linux.
- Built the microcomputers used as hardware for the product.

### Assistant Mechanical Engineer

*Poseidon SA | Athens, Greece.*                                                                                    *05/2018 − 09/2019*

- Studied and analysed hydraulic systems using fluid mechanics methods, which later would be implemented in hydroelectric projects.
- Conducted feasibility studies and preliminary designs of different systems and mechanisms using Solidworks and ANSYS.
- Calculated and designed custom mechanical parts for the machining process.
- Assisted in the hydraulic pumps and turbines selections, cost estimation, equipment layout and coordination with other engineering disciplines during preliminary feasibility studies and design.

### Research Assistant

*Machine Design Lab NTUA | Athens, Greece.*                                                                        *11/2015 − 07/2017*

- Developed a design algorithm using MATLAB, that produces the geometrical model of an asymmetric spur gear tooth based on modified conventional gear theory.
- Worked on the development of proprietary software.
- Conducted a static and transient analysis, using Solidworks for designing and ANSYS for the analysis, in order to determine the mechanical characteristics of the asymmetric gear in comparison to their conventional design.

## EDUCATION

**MSc in Machine learning and Data Science**| Imperial College London, UK.                          *10/2021 −Present*

**MSc and BSc in Mechanical Engineering** |National Technical University of Athens, *Greece.*      *09/2013 − 05/2019*

## PUBLICATIONS

**Surface defects detection on Pressure Die Castings by Machine Learning Exploiting Machine Vision Features**.
A machine vision-based system developed on MATLAB, which based on statistical features extracted from images, classifies parts as defective or normal, using Artificial Neural Networks (ANNs) which were compared to typically used Support Vector Machine (SVM).
*Published paper on Advance in Design, Simulation and Manufacturing, DSMIE (Jan 2022).*

**An integrated approach for designing asymmetric involute helical gears in CAD environment**.
*Paper presented at the 7th International Conference "From Scientific Computing to Computational Engineering". (Nov. 2019)*

## TECHNICAL SKILLS| LANGUAGES

**Programming Languages:** *Python, R, SQL, Matlab/Octave, Arduino.*
**Big Data & Machine Learning Skills:** *Python (scikit-learn, NumPy, pandas, matplotlib,pyspark), MapReduce(Hadoop), Supervised and Unsupervised Learning, Machine Vision.*
**Data Science & Miscellaneous Technologies:** *Data science pipeline (cleansing, wrangling, visualization, modeling, interpretation), Statistical Analysis, Time Series and Spatial Data, Hypothesis Testing, Excel, Git.*
*Fluent in English, French, Greek.*