

GEORGIOS KOUGIANOS

Integrated Master | Survey and Geoinformatics Engineer | PhD Candidate in 3D Mapping using deep learning methods

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PROFESSIONAL SUMMARY

Innovative Surveying and Geomatics Engineer with a strong specialization in Photogrammetry, GIS, and spatial data automation. Bringing over 3 years of hands-on experience in high-precision field data acquisition, UAV operations (250+ flight hours), and the generation of Digital Twins for infrastructure and cultural heritage. Currently advancing research as a PhD Candidate focusing on Multimodal 3D Mapping and Deep Learning. Proven ability to bridge the gap between traditional field surveying and advanced data science, utilizing Python and AI to solve complex geospatial challenges.

CORE COMPETENCIES & TECHNICAL SKILLS

- **GIS & Spatial Analysis:** QGIS, ArcGIS Pro, Geoprocessing, GDAL.
- **Photogrammetry:** Agisoft Metashape, 3D Point Cloud Processing, Digital Elevation/Surface Models (DEM/DSM), mesh and 3D model generation, Orthomosaic generation.
- **UAV & Field Operations:** Certified EASA Drone Pilot (A1/A2/A3). Extensive flight experience with DJI Mavic 3 Enterprise RTK (>200 hrs) and Mavic Mini (>50 hrs) and Matrice 300 RTK (50 hrs). Expert in GNSS Receivers and Total Stations.
- **Programming & AI:** Python (Data Analysis, Geopandas), C++, Embedded C, Neural Networks design/training, MATLAB, Microcontrollers (Arduino, Raspberry Pi).
- **CAD & other software:** AutoCAD, Civil 3D, FJD Trion Model.

PROFESSIONAL EXPERIENCE

Technical Consultant (Lead Surveyor) for Local Development & Authorities EETAA S.A. (Hellenic Agency for Local Development) | Athens, Greece | 10/2025 – Present

- **Strategic Consulting:** Provide high-level technical advisory and strategic planning for municipal infrastructure projects, ensuring compliance with national engineering and spatial standards.

- **Project Supervision:** Oversee public tendering processes for technical works, managing technical specifications and evaluating contractor proposals.
- **Surveying:** Lead topographic mapping and precise "as-built" surveys for public infrastructure using GNSS and Total Stations.
- **Heritage Documentation:** Conduct high-resolution photogrammetric surveys of historical monuments, processing UAV and terrestrial data into accurate 3D models for preservation and restoration studies.

Freelance Surveying & Geomatics Engineer Self-Employed | Greece | 01/2024 – Present

- **End-to-End Project Management:** Manage the full lifecycle of topographic and geomatics projects, from initial client consultation and field data acquisition to final CAD/GIS deliverables.
- **UAV Mapping:** Execute complex drone flight plans for topographical mapping, and manual flights for special scenarios, like photogrammetric surveys of historical monuments.
- **Data Processing & 3D Modeling:** Process raw field data (GNSS/UAV) to produce highly accurate orthomosaics, 3D point clouds, and Digital Surface Models (DSMs) for construction and real estate clients.
- **Quality Assurance:** Implement rigorous QA/QC protocols for all measurements and final deliverables, ensuring zero-defect topographical layouts.
- **Assist in various construction projects as a construction surveyor**

Junior Surveying Engineer Various Projects | Greece | 2022 – 2023

- **Field Operations:** Executed precise field measurements and staking out using RTK GNSS and Total Stations for diverse construction and land registry projects.
- **UAV Data Collection:** Assisted in drone data acquisition for terrain modeling.
- **Drafting & CAD:** Drafted 2D topographic plans and processed initial 3D models and orthophotos under the supervision of senior engineers.

NOTABLE PROJECTS & CONSULTING WORK

- **3D Geometric Mapping of Loutro and Acropoli Samis (Cephalonia):** Executed a highly detailed 3D scan and photogrammetric survey of a Roman Bathhouse complex

and architectural remains. Generated a highly accurate Digital Twin used by archaeologists for the site's restoration and public exhibition.

- **VITAFields (Visual Intelligence for Targeted Agriculture):** Contributed geospatial data processing and visual intelligence methodologies to this precision agriculture initiative, aiming to optimize crop monitoring through spatial data.
- **Byzantine Fortification of Polyneri:** Led the planning and execution of the photogrammetric survey and the photogrammetric processing for the documentation of a historical fortification, producing millimeter-accurate architectural plans, 3D meshes and High resolution orthomosaics.

EDUCATION & ACADEMIC RESEARCH

PhD Candidate in Engineering University of West Attica | Athens, Greece | 11/2024 – Present

- **Research Focus:** *Multimodal 3D Mapping and Understanding of the Built Environment via Deep Learning.* Developing novel neural network architectures to automate the extraction of semantic information from 3D point clouds and photogrammetric models.
- **Teaching Assistant:**
 1. Instructing undergraduate students in the "GIS 1 - Geographic Information Systems and Science" laboratory, focusing on spatial data analysis and ArcGIS Pro workflows.
 2. Instructing undergraduate students in the "Geospatial Decision Support Systems" laboratory, focusing on advanced ArcGIS Pro workflows for decision support and geospatial data process automation.

M.Eng. in Rural, Surveying & Geoinformatics Engineering (Integrated Master) National Technical University of Athens (NTUA) | Athens, Greece | Graduated 03/2023

- **GPA:** 7.56 / 10.0
- **Diploma Thesis (Grade: 10/10):** *"Automatic routing of submarine pipelines subject to geohazards through the interconnection of computational and programming methods."* Designed an automated spatial routing algorithm using programming and GIS environments to optimize pipeline paths while avoiding mapped geological hazards on the seabed.

LANGUAGES

- **Greek:** Native
- **English:** Full Professional Proficiency (C2 - Proficiency)