



Pyrros Nikopoulos

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WORK EXPERIENCE

Geoanalysis – Thessaloniki, Greece

Forest Engineer, Site manager, Lidar operator (mobile mapping), Topography

[07/09/2024 – Current]

- Drone Flight Plan Creation and management & Drone pilot
- Natura 2000 Protected Area Expansion - G.I.S. Project
- Geotima App operator
- Topography assessments (on field measurements with RTK & Base station)
- Topographic surveys for torrents and calculations of Qmax100 - waterbasin, watershed
- QGIS Projects
- On field Lidar operator (x-grids) for mobile mapping
- Photogrammetry

Artemis ITS – Munchen, Germany

Telecommunications Site Manager

[05/05/2023 – 15/04/2024]

- Coordination of the on field operations of workers
- Supervision of fiber optics tubes from installation teams (60 hours/week)
- Procurement management
- Weekly plan design
- Sand quantity calculation
- On going process management
- Proper restoration supervision of asphalt and pavements
- Weekly asphalt quantity calculation and making orders of the correct materials
- Asphalt correct temperature measurement and proper spreading of the material

Aristotle university of Thessaloniki – THESSALONIKI, Greece

Professor's assistant - Hydrology surveys and flood risk assessment

- Decision making on the correct maps selection (Corine, I.G.M.E., Topography maps)
- Hydrographic network drawing and torrent class hierarchy calculation in Autocad&G.I.S. in the area of interest
- Watershed calculation
- Hydrographics data calculation (Hmed, Hmax, Js, Jmed, P., S., Max J., etc...)
- Application of empirical and analytical formulas for the estimation of Qmax100
- Gathering Climate information from meteo stations and verified orgs about the selected area of interest
- Estimation of the high probability risk in a flash flood scenario

- Making suggestion of the methods application to lower the risk of future floods
- Designing and calculating the geotechnical civil work to build Dams
- Dam planning and forces calculation
- Hec-rash software application
- Final Water and hydrology assesment production

 **Marble Komninion LTD** – Thessaloniki, Greece

Web developer

[10/05/2019 – 10/01/2021]

- Web app development with react libraries
- Network maintainance
- Maintenance of computers
- Design and Deploy Company's website
- Debugging, testing
- IT consult
- Hardware supervision

 **Geoanalysis** – THESSALONIKI, Greece

Certified UAS Operator EASA (A1,A2,A3 & STS01)

[07/09/2024 – Current]

Drone flight coordination and creation with specific photogrammetry parameters for the main project of **Technical Chamber of Greece** (TCG) with the name "Detection of unauthorized construction with modern technological means"

EDUCATION AND TRAINING

Integrated Master degree in Forest Engineering

Aristotle University of Thessaloniki [10/01/2015 – 07/05/2021]

City: Thessaloniki | Country: Greece | Website: <https://www.for.auth.gr/> | Field(s) of study: Engineering - Environment

Master in Applied Informatics

University of Macedonia [07/09/2024 – Current]

City: Thessaloniki | Country: Greece | Website: <https://www.uom.gr/en/mai> | Field(s) of study: Information and Communication Technologies: • Software and applications development and analysis

- Internet of things and Artificial Intelligence Internet of Things(AI-IoT)
- Web application development on react framework
- Cybersecurity Attack scenarios and measurements (Linux Virtual Machines) Oracle
- Networks package telematics and information
- Cryptography and the main Cryptographic algorithms (E.C.C., R.S.A. , AES, etc)
- Bitcoin and crypto

Html5, Css3 , JavaScript, Bootstrap, Node.js, git&github,gitbash, Full stack engineer

Codecademy [02/01/2022 – Current]

City: New York City , | Country: United States | Website: <https://www.codecademy.com/learn>

LANGUAGE SKILLS

Mother tongue(s): Greek

Other language(s):

English

LISTENING C1 READING C1 WRITING C1
SPOKEN PRODUCTION B2
SPOKEN INTERACTION B2

German

LISTENING B1 READING B1 WRITING A2
SPOKEN PRODUCTION A2
SPOKEN INTERACTION A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

GIT / PYTHON / GIS / GITHUB / DOCKER / JAVASCRIPT / fibre optics / MYSQL / C / autocad / Web development (HTML/CSS, JavaScript) / IOT with AWS cloud / AI / Node.js, React.js / Vue.js (Junior) / Drone pilot / Hydrology

PROJECTS

[01/06/2025 – Current]

Detection of Illegal Construction Using Modern Technological Means The project “**Detection of Illegal Construction Using Modern Technological Means**”, implemented by the Technical Chamber of Greece, aims to develop an integrated system for the identification, documentation, and monitoring of unauthorized constructions, with particular emphasis on advanced surveying and geospatial recording methods. **Surveying and Recording Methods** The core of the project is based on a multi-layered system for collecting and processing geospatial data: 1. **Satellite Remote Sensing** High- and very-high-resolution satellite imagery is utilized to:

- Detect new constructions through change detection analysis between different time periods.
- Monitor land-use changes.
- Identify extensions of existing buildings.

The analysis relies on spectral indices, image classification techniques, and machine learning algorithms to automatically identify built-up areas and structural changes. 2. **Aerial Photography and Orthophotomaps** Recent aerial imagery and high-accuracy orthophotomaps are used for:

- Precise delineation of building footprints.
- Calculation of surface areas and volumes.
- Comparison with approved urban planning and building permit data.

Orthorectification ensures that imagery is georeferenced and fully compatible with other spatial datasets.

3. **LiDAR Technology** (where applicable) LiDAR data enables:

- Three-dimensional mapping of terrain and structures.
- Creation of Digital Terrain Models (DTMs) and Digital Surface Models (DSMs).
- Accurate estimation of building heights and morphology.

The availability of 3D information is particularly important for identifying unauthorized vertical extensions or structural modifications. 4. **Unmanned Aerial Vehicles (UAVs / Drones)** Targeted UAV surveys are conducted in selected areas to:

- Capture ultra-high-resolution imagery.
- Produce photogrammetric outputs and 3D models.
- Document hard-to-access or environmentally sensitive locations.

Photogrammetric processing generates dense point clouds and highly detailed digital models suitable for technical assessment and legal documentation.⁵ Geographic Information Systems (GIS) Integration All collected data are integrated into a unified GIS platform, where:

- They are cross-checked against urban planning data, building permits, and regulatory declarations.
- Spatial analyses and automated compliance checks are performed.
- Reports and thematic maps are generated.

Automation is based on rule-based validation mechanisms and deviation-detection algorithms that compare approved building data with the current physical reality. Integrated Approach and Impact The project's innovation lies in the integration of multiple data sources (multi-source data fusion) and the application of automated analytical workflows. Rather than relying solely on manual inspection, the system is based on quantitative, georeferenced, and high-accuracy spatial data. This approach enables:

- Objective and transparent enforcement procedures.
- Faster detection of violations.
- Continuous updating of spatial information.
- Strengthened environmental and urban planning protection.

Overall, the project represents a significant step toward the digital transformation of building control mechanisms, introducing a modern, data-driven, and automated framework for territorial monitoring and regulatory compliance.

[03/05/2023 – 10/03/2024]

Deutsche Glasfaser FTTH Expansion Project The project of Deutsche Glasfaser involves the large-scale deployment of FTTH (Fiber-to-the-Home) networks in rural and semi-urban areas of Germany, with a strategic objective of connecting up to 6 million households by 2030. It represents one of the largest private digital infrastructure initiatives in the country, with a total investment plan exceeding €10 billion. Objective and Technology The project focuses on delivering fiber-optic connectivity directly to homes (FTTH), ensuring ultra-high internet speeds and reliable connectivity in previously underserved areas. The technological implementation is based on advanced Passive Optical Network (PON) architectures, such as GPON, XGS-PON, and 25G PON, with Nokia providing core equipment and technical expertise for network deployment. Financing and Investments Network expansion is supported by private capital and institutional investors, including EQT and OMERS. In addition, the European Investment Bank (EIB), under the InvestEU program, has recently granted a €350 million loan to connect approximately 460,000 additional households. Geographic Expansion The project is primarily being developed in the federal states of North Rhine-Westphalia, Schleswig-Holstein, Bavaria, and Lower Saxony—regions where the need for upgraded digital infrastructure is particularly significant. Strategic Importance Deutsche Glasfaser, together with inxio, has emerged as a leading FTTH provider in rural Germany, playing a central role in the country's digital transformation. The project substantially contributes to reducing the digital divide, enhancing competitiveness, supporting local businesses, and improving quality of life by delivering connection speeds exceeding 100–200 Mbps, with the potential for even higher speeds in the future.

[04/07/2022 – 03/03/2023]

National Forest Inventory Program (NFI) The **National Forest Inventory Program (NFI)** concerns the systematic recording, monitoring, and assessment of the condition of forest ecosystems, with a primary objective — among others — the estimation of the carbon stocks they store. Within the framework of the program, the following activities are carried out:

- Sample-based field measurements (tree diameter at breast height, tree height, stand density).
- Mapping of forest areas using remote sensing and satellite data.
- Calculation of above-ground and below-ground biomass.
- Conversion of biomass into stored carbon equivalents using scientifically established coefficients.

Carbon estimation is critical for:

- Monitoring greenhouse gas emissions and removals.
- Supporting national climate change strategies.
- Complying with international reporting obligations (e.g., under the Paris Agreement).
- Designing sustainable forest management policies.

The NFI constitutes a key documentation tool for assessing the role of forests as natural carbon sinks and for planning measures aimed at their protection and enhancement.

[03/07/2022 – 04/03/2023]

Wildlife Recording and Monitoring Program The **Wildlife Recording and Monitoring Program** involves the systematic collection, analysis, and evaluation of data on wildlife species and their populations, with the aim of protecting biodiversity and ensuring the sustainable management of ecosystems. Within the framework of the program, the following activities are implemented:

- **Field surveys**, including direct observation, species counts, and sampling.
- **Use of automated recording tools**, such as camera traps, acoustic sensors, and satellite telemetry (GPS collars).
- **Geospatial analysis (GIS)** for mapping species distribution and habitats.
- **Long-term population monitoring** to assess conservation status and trends.

The program contributes to:

- Early detection of threats (habitat loss, climate change, poaching).
- Evidence-based design of conservation and management measures.
- Support of national and European nature protection policies.
- Fulfillment of international biodiversity reporting obligations.

It serves as a key tool for informed decision-making and the preservation of ecological balance.

The execution of works for the completion and correction of the Forest Map The **execution of works for the completion and correction of the Forest Map**, in accordance with the issued decisions of the competent Forest Map Examination Committees (EPEA) of the Regional Unit of Kastoria, concerns the technical and administrative updating of the officially posted Forest Map. The project includes:

- Incorporation of the decisions issued by the relevant EPEA committees.
- Correction of spatial boundaries and polygon geometries.
- Updating land-use and land-cover classifications (forest, non-forest, agricultural, etc.).
- Adjustment of attribute data in the geospatial database.
- Quality control and verification of the revised cartographic outputs.

The objective is to ensure that the Forest Map accurately reflects the legally validated land status, in compliance with the committee decisions, thereby strengthening legal certainty, transparency, and the proper implementation of forest legislation within the Regional Unit of Kastoria.

[20/09/2024 – 31/12/2024]

Subproject 3 - Photointerpretation works and initial establishment and data collection from NFI sample plots in the Decentralized Administration of Macedonia-Thrace Subproject 3 concerns the implementation of photointerpretation tasks and the initial installation and measurement of sample plots under the National Forest Inventory (NFI) within the jurisdiction of the Decentralized Administration of Macedonia-Thrace. The scope of work includes:

- **Photointerpretation of aerial and satellite imagery** for land cover classification, forest type identification, and preliminary delineation of sampling areas.
- **Selection and demarcation of sample plots** according to the NFI statistical sampling design.
- **Initial field establishment of permanent sample plots**, including georeferencing and marking.

- **Collection of dendrometric and ecological data**, such as tree diameter, height, species composition, stand structure, regeneration, and site characteristics.
- **Recording of data for biomass and carbon stock estimation**, in line with national forest monitoring standards.

The objective of the subproject is to ensure the systematic and scientifically robust implementation of the NFI in the region, providing reliable data for forest resource assessment, sustainable management planning, and climate-related reporting.

[20/09/2024 – 31/12/2024]

SP-05 project - ΤΑΥΠΕΔ The SP-05 project concerns the preparation of specialized Fire Protection Plans in critical areas of responsibility of the Forest Departments of Corinth, Xylokastro, Kalamata, Sparta and the Argolida Forest Directorate, within the framework of the National Recovery Plan "Greece 2.0". It aims to protect forest ecosystems through long-term planning, clearing and maintenance of fire zones.

Key Facts:Subject: Preparation of studies and fire protection plans for the protection of forests.

-Areas of Responsibility: Forest Departments of Corinth, Xylokastro, Kalamata, Sparta and the Forest Directorate of Argolida.

Context: Integrated into the Recovery and Resilience Fund (NextGenerationEU).

Objective: The prevention and protection of forest ecosystems, including actions such as forest clearing and road network maintenance. projects with long-term planning, clearing and maintenance of fire zones.

[11/07/2025 – 31/08/2025]

Assignment of Services of a Consultant to Support the Forestry Objections to the Land Registry Objections Review Committee for the Company's Hotel Complex in Afitos, Halkidiki - ERDA TERRA ΑΦΥΤΟΣ ΜΟΝΟΠΡΟΣΩΠΗ Α.Ε. The process of assigning the services of a Support Consultant for the examination of forest objections concerns the technical and legal protection of the property against the competent Objections Examination Committee (EPEA) of the Hellenic Land Registry.

In the case of the hotel complex in Afitos, Halkidiki, the assignment focuses on the following points:

Technical Support: Preparation of a technical photo interpretation report using aerial photographs from the years 1945/1960 and modern orthophoto maps to prove the non-forest nature of the area.

Representation: Presence of the consultant before the EPEA during the file examination meeting, in order to refute the information of the Halkidiki Forestry Directorate.

Legal Documentation: Cooperation with legal consultants for the invocation of property titles and administrative acts (e.g. building permits, characterization acts) that protect the investment