Panagiotis Christodoulou

Personal Data

Date of birth: 13/12/1989
Nationality: Cypriot
ORCID ID: 0000-0002-3238-2504

Education

09/2015 - 04/2020 **Ph.D. in Civil Engineering**
Department of Civil Engineering and Geomatics, Cyprus University of Technology
PhD Thesis: Reducing Statistical Uncertainty in Geotechnical Engineering Design Relying on Targeted Field Investigation: A Random Field Approach.
Advisor: Associate Professor Dr. Lysandros Pantelidis

09/2013 - 10/2014 **M.Sc. in Civil Engineering and Sustainable Design**
Department of Civil Engineering and Geomatics, Cyprus University of Technology
M.Sc. Thesis: Probabilistic Analysis of Shallow Foundations with Finite Elements in Combination with the Method of Random Fields.

10/2008 - 02/2013 **B.Sc. in Civil Engineering**
Department of Civil Engineering, Frederick University, Cyprus
Final Year Project: Reliability Analysis of Soil Liquefaction Based on SPT Data.

Research Interests:

- Specializing in numerical probabilistic analysis of geotechnical engineering challenges, utilizing random field theory to effectively manage design uncertainties.
- Focused on the impact of soil variability on seismic bearing capacity factors Nc, Nq, and Nγ, to enhance geotechnical design in seismic areas.
- Investigating the influence of horizontal ground acceleration on active and passive earth pressures in spatially variable soils, aiming to refine soil-structure interaction understanding under seismic conditions.
- Researching to determine the maximum soil spatial correlation length θ, a key element in geotechnical design.
- Developing optimal sampling strategies for slope stability analysis, utilizing the Random Finite Element method, and assessing uncertainties in different sampling approaches. Preparing related findings for publication.

Academic Experience

Teaching experience

	Cyprus University of Technology, Faculty of Engineering and Technology, Department of Civil Engineering and Geomatics Position: Special Scientist
01/2022 – 07/2022	Course: CIV531 Sustainable geotechnical design (Master course)
09/2015 - 04/2020	Course: CIV226 Soil Mechanics (Teaching and laboratory; Undergraduate course)

Researcher

09/2015 - 07/2020	Cyprus University of Technology, Faculty of Engineering and Technology, Department of Civil Engineering and Geomatics

Research in "Geotechnical Engineering" field on the following topics:

1. Reducing statistical uncertainty in elastic bearing capacity analysis of isolated and interfering shallow foundations relying on target field investigation – (19/6/2020 – 19/7/2020)
2. The application of the optimal field sampling methodology proposed by Panagiotis Christodoulou and Dr Lysandros Pantelidis – (11/10/2019 -29/11/2019)
3. Effect of soil sampling on the reliability of shallow foundation elastic settlement (16/08/2019 - 31/10/2019) and bearing capacity design – (17/05/2019 -31/07/2019).
4. Effect of soil sampling on the reliability of shallow foundation bearing capacity design – (17/05/2019 -31/07/2019).
5. Preparation of RFEM code using the programming language FORTRAN, for the problem "Reliability based analysis of rocks slope against planar failure using different factoring strategies." - (15/9/2018 -15/11/2018)
6. Preparation of RFEM code using the programming language FORTRAN, for the problem of shallow foundation in the crest of a slope. – (20/04/2018 - 29/06/2018)
7. Research in "Geotechnical Engineering". The research is concerned with the estimation of soil spatial correlation length of random fields - (01/09/2017 - 08/12/2017)
8. Research in "Stochastic Geotechnical Engineering". Within the concerns of the Horizon 2020 program. (01/09/2015 - 31/10/2015)
9. Research in "Effect of soil heterogeneity in foundations". The research is concerned with modelling the soil with random fields and field tests. (20/10/2015 - 30/11/2015)

List of publications:

Journals:

1. Pantelidis, L., & **Christodoulou, P**. (2022). Comparing Eurocode 8-5 and AASHTO methods for earth pressure analysis against centrifuge tests, finite elements, and the Generalized Coefficients of Earth Pressure.
2. **Christodoulou, P**., Pantelidis, L., & Gravanis, E. (2020). A Comparative Assessment of the Methods-of-Moments for Estimating the Correlation Length of One-Dimensional Random Fields. *Archives of Computational Methods in Engineering*, 1-19.
3. **Christodoulou, P.**, Pantelidis, L., & Gravanis, E. (2020). The Effect of Targeted Field Investigation on the Reliability of Axially Loaded Piles: A Random Field Approach. *Geosciences*, *10*(5), 160.
4. **Christodoulou, P**., Pantelidis, L., & Gravanis, E. (2020). The Effect of Targeted Field Investigation on the Reliability of Earth-Retaining Structures in Passive State: A Random Field Approach. *Geosciences*, *10*(3), 110.

5. **Christodoulou, P**., & Pantelidis, L. (2020). Reducing Statistical Uncertainty in Elastic Settlement Analysis of Shallow Foundations Relying on Targeted Field Investigation: A Random Field Approach. *Geosciences*, *10*(1), 20.
6. Gravanis, E., Pantelidis, L., & **Christodoulou, P**. (2020). An Analytical Random Field Solution for the Reliability of Axially Loaded Piles in the Ultimate Limit State Considering the Effect of Soil Sampling. *Geosciences*, *10*(7), 269.
7. **Christodoulou, P**., Pantelidis, L., & Gravanis, E. (2019). The effect of targeted field investigation on the reliability of earth-retaining structures in active state. *Applied Sciences*, *9*(22), 4953.

Conferences:

1. **Christodoulou, P.** & Pantelidis, L. (2023). Reducing Statistical Uncertainty in the Bearing Capacity Analysis of Shallow Foundations. *In the 9th Pan-Hellenic Conference on Geotechnical Engineering.*
2. Pantelidis, L., & **Christodoulou, P**. (2017). Spatial Correlation length of clay soils in practice and its influence in probabilistic bearing capacity analysis. In *Geo-Risk 2017* (pp. 487-496).

Dissertations:

1. **Christodoulou, P.** (2020). Reducing statistical uncertainty in geotechnical engineering design relying on targeted field investigation: A random field approach (Doctoral dissertation, Department of Civil Engineering and Geomatics, Faculty of Engineering and Technology, Cyprus University of Technology).
2. **Christodoulou, P.** (2015). Probabilistic Analysis of Shallow Foundations with Finite Elements in Combination with the Method of Random Fields. (MSc dissertation, Department of Civil Engineering and Geomatics, Faculty of Engineering and Technology, Cyprus University of Technology).

Invited reviewer

Actively involved as a peer reviewer at:

1. Engineering Geology, published by Elsevier: Focusing on the intersection of geotechnical engineering and geological science.
2. Applied Sciences, MDPI: Reviewing multidisciplinary studies with an emphasis on practical applications in geotechnical engineering.
3. Geo-Risk, part of the Geo-Institute of ASCE: Evaluating papers that delve into risk assessment and management in geotechnical engineering contexts.

Professional Experience

12/2023 – TODAY | Project Manager | Gavriel Building & Civil Engineering Contractors

Oversees all aspects of project management, including strategic planning, resource allocation and project lifecycle management, focusing on timely cost-effective and quality outcomes.

06/2023 – 12/2023 | Assistant Project Manager | bbf: Development

Managed project execution, team coordination and milestone adherence, ensuring on-schedule quality project delivery. Demonstrated exceptional problem-solving skills by implementing innovative strategies in construction methodologies, resulting in significant cost and time efficiencies in key projects.

06/2020 – 06/2023 | Civil Engineer | IMATECH KOUNNA CONSTRUCTION

Expert in managing and streamlining the tender process, including project analysis, documentation preparation and cost evaluation, with a focus on effective bid management and successful contract negotiations.

2016-2021 | Consultant Civil / Geotechnical Engineer | Self – employed.

1. Design and construction of earthfill water storage reservoirs in Maroni and Paphos, notably a 40,000 m3 recycled water facility and a large 145,000m3 reservoir at Minthis Hills, Tsada.
2. Upgrading and stabilizing the Ha-Potami dam to enhance structural integrity and safety.
3. Conducting stability assessments and improvements for Vasiliko cement plant's reservoir spillway.
4. Implementing advanced slope stabilization techniques in Paphos using micro-piles.

Computer Skills

1. Proficient in AutoCAD Civil 3D and AutoCAD for engineering design and drafting.
2. Skilled in Fortran 95, Python 3, HTML. A notable project is a Python-based web program for geotechnical analysis, available at Generalized Coefficient Program.
3. Experienced in using the Random Finite Element Method (RFEM), Slide 2d, and RS2 for advanced geotechnical analysis and simulations.
4. Highly adept in Microsoft Office, certified with an ECDL certificate.

Field and laboratory experience

- Conducted comprehensive geotechnical investigations using advanced equipment like the Pagani TG63-100 capable of performing Cone Penetration Test (CPT) and Standard Penetration Test (SPT).
- Gained extensive laboratory experience in geotechnical testing, including wet and dry sieve analysis, pycnometer test, unconfined compression, triaxial tests, Atterberg limits determination (Fall cone for liquid limit), consolidation test, and Proctor compaction test.

Member of Chambers

- Member of the Cyprus Scientific and Technical Chamber
- Member of the Cyprus Association of Civil Engineers
- Member of Cypriot Society of Soil Mechanics and Geotechnical Engineering

Skills and interests

Languages	Greek: Native proficiency, English: Proficient (independent user), with strong skills in professional and technical communication contexts.
Interests	Jogging, Basketball, Travelling, Reading

Additional Information

- Military services completed.
- Holder of first aid certificate