

KONSTANTINOS GEORGIOU

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AI Research Engineer

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SUMMARY

- Accumulated a unique mix of 7 years of experience in AI, spanning academic research and practical industry solutions in computer vision, data engineering, generative AI, and classical ML.
- My work has been featured at major conferences like NeurIPS, and my broad contributions to open-source projects have been showcased through a rich [Github profile](#), proving my dedication to pushing the boundaries of AI and sharing knowledge with the community.

EXPERIENCE

2021 - Now

- PhD AI Researcher

University of Tennessee - US

Skills: Python · Machine Learning · Computer Vision · Research · SQL · PyTorch · Team Leadership · Statistical Modeling

- Enhanced foundational research in masked image modeling research by tailoring scale factors for remote sensing data, achieving an average accuracy improvement of 5% over the state-of-the-art across 4 datasets.
- Developed novel fine-tuning strategies for a self-supervised model, reducing training time by 32% and improving Macro F1 scores by 5.4% for the client's phase detection pipeline.
- Pioneered a contrastive learning model that improved state-of-the-art pixel-based semantic segmentation accuracy by 5.9%.
- Implemented a Koopman-based method for transient event detection, improving the average temporal error by 21.5 days.

2019 - 2021

- Associate Data Engineer

Performance Technologies S.A - Greece

Skills: Python · Data Engineering · Software Engineering · Machine Learning · Apache Spark · SQL · TensorFlow · Team Leadership

- Led the rapid completion of a critical terabyte-scale data replication project for Greece's leading [telecommunications provider](#), reducing replication time from days to minutes and ensuring real-time views for ETL and analytics.
- Spearheaded the development of a machine learning model to predict order fulfillment times, which, following a comprehensive analysis of business operations and consultation with clients, resulted in a 34% reduction over previous baseline.
- Managed the design and implementation of a SIP call quality benchmarking service, successfully deployed across vital public institutions, facilitating improved service monitoring and enabling the Greek government to credit service providers.

- Associate Researcher

University of Patras - Greece

Skills: Python · Community Detection · Algorithm Design · Machine Learning · Apache Spark · SQL · Research

- Conducted intensive machine learning research, specializing in graph theory and network analysis.
- Reduced the execution time of the Girvan-Newman community detection [algorithm](#) by 84%, creating the first scalable solution while maintaining high accuracy and securing [publication](#) in the Algorithms journal.

2018 - 2019

- Junior Software Engineer

Global Voices Ltd - UK

Skills: Python · Software Engineering · Operating systems · SQL

- Played a pivotal role in developing and maintaining the company's proprietary content management system, significantly reducing bugs, implementing new features, overseeing code reviews, improving system functionality and user experience.
- Optimized the company's continuous integration and deployment pipelines, enhancing the efficiency and reliability of product releases, resulting in a 50% reduction in rollbacks and ensuring a streamlined development cycle.

2017 - 2018

EDUCATION

2025

- PhD in Data Science & Engineering

University of Tennessee

- Received Fellowship Award from the University of Tennessee Graduate School and Tickle College of Engineering, which recognizes academic excellence and research potential.
- Led innovative research in LLM security, uncovering crucial ground rules for ensuring secure code generation (to be published).
- Mastered the intricacies of ML by designing and implementing foundational models, including [CNNs](#) and [RL agents](#), and delving into advanced statistical concepts such as Bayesian formulation and hidden Markov models, setting a strong base for innovative solutions in the field.

2019

- Integrated Master's in Computer Science & Engineering

University of Patras

- Developed an innovative distributed algorithm for community prediction in social graphs, achieving significant improvements in scalability and accuracy.

PUBLICATIONS

- *Advancing Multi-scale Remote Sensing Analysis through Self-Supervised Learning Fine-tuning Strategies.* - [IEEE IGARSS 2024](#)
- *Koopman-based Transition Detection in Satellite Imagery.* - [IEEE IGARSS 2024](#)
- *Occasionally Secure: A Comparative Analysis of Code Generation Assistants.* - [Arxiv 2024](#)
- *Cross-Scale MAE: A Tale of Multi-scale Exploitation in Remote Sensing.* - [NeurIPS 2023](#)
- *Semantic Segmentation in Aerial Imagery using Multi-level Contrastive Learning with Local Consistency.* - [WACV 2023](#)
- *A Distributed Hybrid Community Detection Methodology for Social Networks.* - [Algorithms 2019](#)