



Konstantinos E. Mixios

SOFTWARE ENGINEER

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Summary

Seasoned civil engineer with a Master's degree in earthquake and structural engineering, complemented by a successful five-year tenure as a subcontractor software engineer. Proficient in Python, C++, and JavaScript, I've seamlessly integrated my engineering expertise with software development skills to contribute to a diverse range of projects. As a subcontractor for European Research programs and beyond, I've delivered innovative solutions tailored to specific project requirements. From developing computational tools for mechanics, utilizing new era techniques and tools, to contributing to open-source projects, my versatile background uniquely positions me to drive advancements at the intersection of engineering and software engineering.

Education

Aristotle University of Thessaloniki

Thessaloniki, Greece

MASTER OF SCIENCE IN EARTHQUAKE AND STRUCTURAL ENGINEERING

Sept. 2018 - Dec. 2019

- Graduation Thesis titled 'Parametric analysis of monotonic and cyclic behaviour of soil-pipe interaction with finite element method' awarded a 10/10.
- Overall Weighted Average: 8.21/10.

Aristotle University of Thessaloniki

Thessaloniki, Greece

DIPLOMA OF CIVIL ENGINEERING

Sept. 2013 - Sept 2018

- Diploma Thesis titled 'Development of a Python-based Framework for optimization of concrete plain models simulated in OpenSees using Differential Evolution Algorithms including SSI effects.' awarded a 10/10.
- Overall Weighted Average: 8.05/10.

Experience

Software Engineer

Thessaloniki, Greece

SOFTWARE ENGINEER SUBCONTRACTOR

Mar. 2020 - Current

- REDI Engineering Solutions PC
- Aristotle University of Thessaloniki
- National Technical University of Athens
- SURE Compentance Center LTD

University of Toronto, Department of Civil and Mineral Engineering

Toronto, Canada

INVITED RESEARCHER

Jul. 2019 - Dec. 2019

- H2020 Exchange-Risk "Experimental and Computational Hybrid Assessment of Natural Gas Pipelines Exposed to Seismic Risk"

Institute of Engineering Seismology and Earthquake Engineering, Research and Technical Institute

Thessaloniki, Greece

INTERN

Jun. 2017 - Sep. 2017

- Internship

Software Developing

Languages:

- Python
- C/C++
- JavaScript, TypeScript
- MATLAB

Libraries:

- Numpy, Scipy, Pandas
- PyTorch, Scikit-learn, Tensorflow
- Matplotlib, Seaborn, Plotly

Frameworks:

- FastAPI
- Django
- Flask
- PyQt
- Dash
- React
- Angular
- Vue.js
- Redux
- expo

Tools:

- Docker, Kubernetes
- Git
- Jira, Confluence, ClickUp, Trello, Notion
- CI/CD (GitHub Actions, CircleCI, Travis CI)

Cloud:

- AWS(EC2, RDS)
- Google Firebase
- Google Cloud Console

Greek:

- Mother Tongue

English:

- IELTS Overall Band Score 7.0
- Certificate of English Language Competency, Michigan State University
- Certificate of Competency in English, The University of Michigan

German:

- Goethe-Zertifikat B1

Foreign Languages

Personal Projects

GiD+OpenSeesPy

Website

DEVELOPER

2023

- Extended the functionality of the GiD+OpenSees software by implementing code to enable exports to the OpenSeesPy model. This involved transitioning from the generation of OpenSeesTCL files, which was the previous standard, to creating exports compatible with OpenSeesPy.

XFEMPy - Python Library

GitHub

DEVELOPER

2022

- Extended finite element method for 2D linear-elastic fracture modeling computational library.

SpectralMatchPy - Python Library

GitHub

DEVELOPER

2022

- Spectral matching of 1 or 2 horizontal earthquake components to a target spectrum of the corresponding Design codes.

DICON BIM Platform

Website

DEVELOPER

2021

- Pilot bidirectional communication platform for integrated digital representation of construction projects in real-time.

OpenSeesTcl2Py - Python Library

DOI

DEVELOPER

2022

- Python Library which converts OpenSees models written in Tcl programming language to OpenSees models.

biaxialPy - Python Library

GitHub

DEVELOPER

2021

- Biaxial Load analysis for concrete sections

OpenSeesPySubstepping - Python Library

DOI

DEVELOPER

Nov 22, 2021

- Developed a python library where you can create numerical analysis substeps automatically when your the solver is not converging.

Blog related to Engineering and Programming

mixiosk.com

BLOGGER

Jul. 2021 - PRESENT

- Maintaining and updating a personal blog related to structural engineering, implementations of computational mechanics, and programming

Publications

- 2023 **A model-based damage identification framework for R/C bridges using vibrational measurements**, Konstantinos E. Mixios, Vassilis K. Papanikolaou, Sotiria Stefanidou, Olga Markogiannaki
EURODYN2023
- 2023 **A damage detection approach to assess the performance level of R/C bridges using vibrational response measurements**, Konstantinos E. Mixios, Olga Markogiannaki, Vassilis K. Papanikolaou, Sotiria Stefanidou
COMPDYN2023
- 2023 **Designing a low-cost wireless sensing system for real time damage assessment of R/C bridges**, Vassilis K. Papanikolaou, Konstantinos E. Mixios, Sotiria Stefanidou, Olga Markogiannaki
COMPDYN2023
- 2022 **Δυναμική ανάλυση συστήματος γέφυρας αμαξοστοιχίας με την τεχνική της συν-προσομοίωσης (GR)**, Mixios E. Konstantinos, Paraskevopoulos Elias, Stefanidou Sotiria, Markogiannaki Olga
5 ΠΣΑΜΤΣ
- 2022 **Βάση δεδομένων καμπυλών σεισμικής τρωτότητας κτιρίων Ο/Σ (GR)**, Mixios E. Konstantinos, Stefanidou Sotiria, Markogiannaki Olga, Argyroudis Sotirios, Fragiadakis Michalis
5 ΠΣΑΜΤΣ
- 2022 **Database and comparative evaluation of seismic fragility curves for RC buildings**, Sotiria Stefanidou, Olga Markogiannaki, Konstantinos E. Mixios, Sotirios Argyroudis, Michalis Fragiadakis
3rd European conference on earthquake engineering and seismology
- 2020 **Master Thesis: "Parametric analysis of monotonic and cyclic behaviour of soil-pipe interaction with finite element method"**, Mixios E. Konstantinos, Supervisor: Manolis George, Oh-Sung Kwon, Sextos Anastasios [DOI](#)
- 2019 **A Comparative Experimental Study of Strengthened Columns using Steel Reinforced Grout (SRG) Jacketing**, Katsamakas A. Antonios, Mixios E. Konstantinos, Papanikolaou K. Vassilis, Thermou E. Georgia, Katakalos Konstantinos [Link](#)
- 2019 **Σεισμική διακινδύνευση πολεοδομικών ενοτήτων. Εφαρμογή στην πόλη της Θεσσαλονίκης(in Greek)**, Evi Riga, Anna Karatzetzou, Sotirios A. Argyroudis, Panagiotis Gavriil, Athanasia Kalampouka, Ioannis Katsavakis, Antonios A. Ktsamakas, Aikaterini Kolitsidaki, Mixios E. Konstantinos, Apostolia Mpantralexi, Vasileios Stamoulis, Nikolaos Stergioulas, Nikolaos Xatzakis, Kyriazis Pitilakis [Link](#)
- 2018 **Diploma Thesis: "Development of a Python-based Framework for optimization of concrete plain models simulated in OpenSees using Differential Evolution Algorithms including SSI effects."**, Mixios E. Konstantinos, Supervisor: Vassilis K. Papanikolaou, Dimitris K. Pitilakis [Link](#)
- 2017 **PEER Blind Prediction Contest 2017 Modeling and Analysis Report**, Vassilis K. Papanikolaou, Theocharis Kartalis-Kaounis, Kiveli Mousmoula, Mixios E. Konstantinos, Samouil Psounopoulos

Memberships

- Current **Member of the Technical Chamber of Greece**, [TEE-TCG]
- Current **Member of Hellenic Association for Earthquake Engineering**, [HAEE-ETAM]