



Stelios Karozis

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Patriarchou Grigoriou & Neapoleos, NCSR "Demokritos" - Building 16, 15310, Ag. Paraskevi, Greece

● WORK EXPERIENCE

01/03/2019 – CURRENT

EXTERNAL RESEARCH COLLABORATOR – ENVIRONMENTAL RESEARCH LABORATORY (EREL), INSTITUTE OF NUCLEAR & RADIOLOGICAL SCIENCES & TECHNOLOGY

- **Research field:** Interdisciplinary research in Machine Learning and deterministic / stochastic simulation techniques
- **Research activities:** Risk Assessment of Critical infrastructure to Climate Change - Study the impacts of climate change in Greece - Simulation of weather and seasonal forecast
- **Other activities:** Creation of computational tools in bash, ncl, fortran, python, php - Administrator of HPC infrastructure of EREL - Installation and parameterization of simulations tools and codes in Unix systems

Athens, Greece

01/11/2018 – 28/02/2019

EXTERNAL RESEARCH COLLABORATOR / MARIE CURIE FELLOW – DIADIKASIA BUSINESS CONSULTING S.A.

- Marie Curie fellow; Research & development of an up-scaled metal hydride hydrogen compressor for energy storage applications and performance of a strategic market analysis.

Halandri, Greece

12/10/2018 – 30/10/2018

SCIENTIFIC COMPUTING CONSULTANT – SCHOOL OF PEDAGOGY AND TECHNOLOGY EDUCATION (ASPETE)

- Selection and installation of upgrade components of the hardware and software of the HPC infrastructure

Athens

01/01/2018 – 30/10/2018

POSTDOC RESEARCHER – ENVIRONMENTAL RESEARCH LABORATORY (EREL), INSTITUTE OF NUCLEAR & RADIOLOGICAL SCIENCES & TECHNOLOGY

- Resilience Assessment of Critical infrastructure to Climate Change - Simulations in molecular scale (molecular simulation) - Creation of computational tools in bash, ncl, fortran, python, php - Administrator of HPC infrastructure of EREL - Installation and parameterization of simulations tools and codes in Unix systems

Athens, Greece

25/02/2015 – 30/09/2015

SCIENTIFIC COMPUTING CONSULTANT – SCHOOL OF PEDAGOGY AND TECHNOLOGY EDUCATION (ASPETE)

- Selection, installation and administration of the hardware and software of the HPC infrastructure

Athens, Greece

01/05/2013 – 31/12/2017

PHD RESEARCHER – ENVIRONMENTAL RESEARCH LABORATORY (EREL), INSTITUTE OF NUCLEAR & RADIOLOGICAL SCIENCES & TECHNOLOGY

- Simulations in molecular scale (molecular simulation) - Creation of computational tools in bash, ncl, fortran, python, php - Administrator of HPC infrastructure of EREL - Installation and parameterization of simulations tools and codes in Unix systems

Athens, Greece

01/10/2011 – 31/01/2013

RESEARCH ASSISTANT – ENVIRONMENTAL RESEARCH LABORATORY (EREL), INSTITUTE OF NUCLEAR & RADIOLOGICAL SCIENCES & TECHNOLOGY

- Simulations in macro scale - Simulation of climate projection - Simulation of weather forecast- Creation of computational tools in bash, ncl, fortran, python, php - Administrator of HPC infrastructure of EREL - Installation and parameterization of simulations tools and codes in Unix systems

Athens, Greece

29/08/2009 – 30/09/2010

INTERNSHIP – ENVIRONMENTAL RESEARCH LABORATORY (EREL), INSTITUTE OF NUCLEAR & RADIOLOGICAL SCIENCES & TECHNOLOGY

- Creation of parallel computing code of Simulated Annealing algorithm - Creation of computational tools in bash, ncl, fortran, python, php - Administrator of HPC infrastructure of EREL - Installation and parametrization of simulations tools and codes in Unix systems

Athens, Greece

● **SKILLS**

Job-related

- Machine Learning/Deep Learning methods,
- Physicochemical processes,
- Sorption,
- Diffusion,
- Molecular Dynamics,
- Stochastic algorithms,
- Physical and Chemical processes,
- Thermodynamics,
- Computational Fluids Dynamics

● **PROJECTS**

Personal Projects

2020 - ongoing

Co-founder of NanoAI community (<http://nano-ai.iit.demokritos.gr/>)

September 2020

Organizer & Chair committee - AI in Natural Sciences and Technology (AINST2020) (<https://ainst.scify.org/>)

2020 - ongoing

Participation in CLIMPACT (National Network for Climate Change Impacts) - Development of deep learning approach for correcting seasonal forecast data and finding associations between weather conditions and compounds extreme events

2019 - ongoing

Collaboration with ETHNIKI ASFALISTIKI_ - Adaptation of insurance services in Climate Change (statistical and data driven approaches)

Scientific Projects

April 2020 - Present

"SPARTA- Strategic programs for advanced research and technology in Europe"

(HORIZON2020 - 830892)

March 2019 - February 2020

"XENIOS – A combined application platform for the protection and promotion of cultural and tourist sites"

(EPAnEK - Τ1ΕΔΚ-02219)

November 2018 - February 2019

"ATLAS-MHC – Advnace Metal Hydride Hydrogen Compressors – Pilot Development and Market Penetration", at

DIADIKASIA Business Consulting S.A.,

(FP7-PEOPLE-2013-IAPP - 612292)

July 2016 - September 2018

"MOZART: Mesoporous matrices for localized pH-triggered release of therapeutic ions and drugs, at NCSR "Demokritos",

(HORIZON2020 - 685872)

"EU-CIRCLE: A pan-European framework for strengthening Critical Infrastructure resilience to climate change", in NCSR

"Demokritos", (HORIZON2020 – 653824)

May 2013 - June 2016

"EnTeC - Enhancing the capacity for Environmental Technology and Climate Research", at NCSR "Demokritos",

(FP7 – 316173)

October 2011 - January 2013

GSRT-"Study the climate change and atmospheric pollution in Greece ", in NCSR "Demokritos"

(09-ΣΥΝ31-667)

January 2009 - June 2009

Participation in a research project funded by the Greek Secretariat for Research & Technology "Development and application of quality control in petrol stations", in National Technical University of Athens

● EDUCATION AND TRAINING

01/10/2018 – 25/02/2021 – Tripoli, Greece

M.SC. IN DATA SCIENCE – University of Peloponnese - Department of Telecommunications Science and Technology

A Deep Learning approach for spatial and time error correction of numerical weather prediction simu

25/04/2013 – 28/11/2017 – Herakleion - Crete, Greece

PHD IN MOLECULAR SIMULATIONS – University of Crete - Department of Chemistry

Funded by Greek Scholarships Foundation (IKY) under the IKY- Siemens program

Study of the structure and diffusion processes in nanocomposite systems using molecular simulation

01/10/2011 – 08/03/2013 – Athens, Greece

M.SC. IN COMPUTATIONAL MECHANICS – National Technical University of Athens

Study of thermodynamic properties of liquid mixtures with molecular simulation

01/09/2005 – 11/10/2010 – Athens, Greece

DIPLOMA (5-YEARS STUDIES) IN CHEMICAL ENGINEERING – School of Chemical Engineering, National Technical University of Athens

Modelling the spatial distribution of fluids in porous media

● LANGUAGE SKILLS

Mother tongue(s): GREEK

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
FRENCH	B1	B1	A2	B1	A2

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

● PUBLICATIONS

Peer review paper to be submitted

Karozis S., Sfetsos A., *A climate data driven analysis of extreme storms in Greece area based on insurance data (2021)*

Krokidas P., Karozis S, Kainourgiakis M., Steriotis T., Economou I., *A Physics-based Machine Learning Model for the Design of Highly Selective Zeolitic Imidazolate Frameworks (2021)*

Selective peer reviewed papers

Karozis S, Sfetsos A, Gounaris N, Vlachogianni D *An assessment of climate change impact on air masses arriving in Athens, Greece* (2021) Theoretical and Applied Climatology (under review)

A. Sfetsos, S Karozis, I. Klampanos *A Deep Learning approach for spatial error correction of S2S data*, (2021) EGU2021: Sub-seasonal-to-Seasonal Prediction: Processes and Impacts

Sfetsos, A., Giroud, F., Clemencau, A., (...), Hedel, R., Hahmann, S. *Assessing the Effects of Forest Fires on Interconnected Critical Infrastructures under Climate Change. Evidence from South France* (2021) Infrastructures, 10.3390/infrastructures6020016

Varela, V., (...), N., Karozis, S. *Methodology for the Study of Near-Future Changes of Fire Weather Patterns with Emphasis on Archaeological and Protected Touristic Areas in Greece* (2020) Forests, 10.3390/f11111168

Politi N., Sfetsos A., Vlachogiannis D., Nastos P., Karozis S. *A Sensitivity Study of High-Resolution Climate Simulations for Greece* (2020) Climate, 10.3390/cli8030044

Karozis S., Mavroudakis E., Charalambopoulou G., Kainourgiakis M. *Molecular simulations of self-assembled ceramide bilayers: comparison of structural and barrier properties* (2020) Molecular Simulation, 10.1080/08927022.2019.1703975

Katopodis T. (...) Karozis S., Sfetsos A. *Assessment of climate change impacts on wind resource characteristics and wind energy potential in Greece* (2019) Journal of Renewable and Sustainable Energy, 10.1063/1.5118878

Varela V. (...) Giroud F. *Projection of Forest Fire Danger due to Climate Change in the French Mediterranean Region* (2019) Sustainability, 10.3390/su11164284

Katopodis T. (...) Makropoulos C. *EU-CIRCLE methodological approach for assessing the resilience of the interconnected critical infrastructures of the virtual city scenario to climate change* (2018) Energetika, 10.6001/energetika.v64i1.3725

Tsimpanogiannis I. (...) Stubos A., Economou I. *Using clathrate hydrates for gas storage and gas-mixture separations: experimental and computational studies at multiple length scales* (2018) Molecular Physics, 10.1080/00268976.2018.1471224

Karozis S., Charalambopoulou G., Steriotis T., Stubos A., Kainourgiakis M. *Determining the specific surface area of Metal Organic Frameworks based on a computational approach* (2017) Colloids and Surfaces A: Physicochemical and Engineering Aspects, 10.1016/j.colsurfa.2016.12.016

Papadimitriou N., Kainourgiakis M., Karozis S., Charalambopoulou G. *Studying the structure of single-component ceramide bilayers with molecular dynamics simulations using different force fields* (2015) Molecular Simulation, 10.1080/08927022.2014.947483

Papadimitriou N., Karozis S., Kainourgiakis M., Charalambopoulou G. *Studying the lateral chain packing in a ceramide bilayer with molecular dynamics simulations* (2014) Journal of Physics: Conference Series, 10.1088/1742-6596/574/1/012014

Book chapters

Emmanouil G., Vlachogiannis D., Sfetsos A., Karozis S., Tasopoulou A., *Perspectives on Atmospheric, Sciences*, Springer, 2017.

● ORGANISATIONAL SKILLS

Organisational skills

Well organized, Good managerial skills, Initiative

● COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills

Cooperation skills, Easy adjustment in multi-disciplinary teams, Communication skills