Nikolaos -Stefanos Kostagiolas

Curriculum Vitae

Education

2019–today	**Ph.D. Student**, *DMML Group*, University of Geneva, Switzerland. Focusing on Reinforcement learning / Imitation learning techniques applied on human locomotion modeling
2017–2018	**M.Sc. in Data Science**, *Athens University of Economics and Business*, Greece, *8.57/10*. Awarded with excellence
2011–2017	**B.Sc. Informatics and Telecommunications**, *Dept. of Informatics and Telecommunications, National and Kapodistrian University of Athens*, Greece, *7.61/10*. Specialization : Data and Knowledge Management
2008–2011	**Apolytirion**, *2nd High School of Moschato*, Athens, Greece, *18.3/20*. Awarded with excellence

M.Sc. thesis

title	*Learning optimization algorithms with neural networks*
supervisor	Prof. Evangelos Markakis
description	Extended previous studies on meta-learned optimizers by inspecting the generalization capabilities on a variety of different settings. Awarded with the EFG Eurobank scholarship for the best MSc thesis in the program.

B.Sc. thesis

title	*A study on chromatin structure via nucleosome positioning pattern classification*
supervisors	Prof. Panagiotis Stamatopoulos, Dr. George Giannakopoulos
description	Applied text-mining on genomic sequence textual data using HMM, Bag-of-Words and N-gram Graph representations. Achieved better results than the current state-of-the-art approaches in related studies.

60C, Korai St. – Moschato, Attiki, 18345 – Greece

✆ +30 69 80 66 22 27 • ☎ +30 (210) 94 08 186

✉ nikos.kostagiolas@gmail.com • ⌨ sdi1100039@di.uoa.gr

▬▬▬ Experience

Vocational

October 2018–July 2019
Machine Learning Engineer / Research Assistant, *Athena Research and Innovation Center*, Athens, Greece.
Working on geospatial data analysis. Tasks include:
- Developing open-source code (scikit-learn and Tensorflow) towards bridging the gap between current approaches that use geospatial data and the state of the art in Machine Learning.
- Producing at least four (4) scientific papers to be submitted at peer-reviewed conferences

March 2015– October 2015
Internship - Data Warehousing and Data Mining, *IBM Hellas*, Athens, Greece.
Worked as an ETL Expert for the projects "SOLVENCY II" at Ethniki Hellenic General Insurance Co. S.A. and "Energy Trading & Risk Management" for the Greek Department of Energy Management .
Detailed achievements:
- Evaluated as "Excellent" by my supervisor Minas Koulisianis for both projects I was involved into;
- Undertook the ETL development for the project "Energy Trading & Risk Management" individually and delivered with excellent performance :
  - Being the only individual of my team trusted with the position after spending 3 months at Ethniki Hellenic General Insurance Co. S.A. (a);
  - Successful completion of my tasks by setting up the ETL infrastructure by the end of the internship (b)
  - Received official offer by IBM Hellas for full occupation as an ETL Expert by the end of the internship(c);

June 2014– September 2014
Internship - Back-end Developer, *Technical University of Athens*, Athens, Greece.
Developed and improved the e-class mobile API, used by most greek universities for extra-class communication - Selected 2nd among 130 candidates. The project was co-supervised by the Maellak Unit of Excellency in Open-source Software

Academic

September 2017–January 2019
Volunteer Research Associate, *Multidimensional Data Analysis and Knowledge Management Laboratory - Department of Computer Engineering and Informatics - University of Patras*, Patras, Greece.
I am currently conducting research in Deep Learning applied on multi-channel signals for frailty recognition under the supervision Dr Evangelia Zacharaki. The implementation uses the Keras deep learning framework.

July 2016–July 2017
Volunteer Research Associate, *CIL Lab - NCSR Demokritos*, Athens, Greece.
Conducting research on Deep Learning architectures applied on Sound Analysis under the supervision of Dr. Theodoros Giannakopoulos. The project, entitled "Convolutional Neural Networks for Automatic Soundscape Quality Estimation using Audio Analysis", focuses on applying novel deep architectures to the problem of qualitative soundscape evaluation. The implementation used the Keras/Theano deep learning frameworks.

September 2015–today
Volunteer Research Associate, *SKEL Lab - NCSR Demokritos*, Athens, Greece.
Conducting research on Natural Language Processing and Bioinformatics under the supervision of Prof. Panagiotis Stamatopoulos and Dr. George Giannakopoulos. I am currently working there on extending my B.Sc. thesis entitled "A study on chromatin structure via nucleosome positioning pattern classification" focusing on genomic text-mining. The implementation, written in Java, has been open-sourced.

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Miscellaneous

January 2013–June 2015	**Volunteer Teaching Assistant**, *Dept. of Informatics and Telecommunications - National and Kapodistrian University of Athens*, Athens, Greece. Voluntarily worked as a Teaching Assistant in Introduction to Programming and Data Structures Lab
September 2013–June 2016	**Volunteer Teacher**, *Municipality of Moschato-Tavros*, Athens, Greece. Voluntarily working as a teacher for the Municipality of Moschato - Teaching High School Programming Development.

Languages

Greek	**Independent user**	*Native*
English	**Independent user**	*Certificate of Proficiency - Michigan, IELTS 8 Band Score*
French	**Upper Intermediate user**	*Delf B1*

Computer Science skills

Programming Languages	C++, C, JAVA, C#, Prolog, SQL, Assembly(MIPS)	Scripting Languages	R, Matlab, Python, Unix Shell (Bash)
Machine Learning Frameworks and Toolkits	**JAVA**: Weka, Mallet, **Python**: Theano, Lasagne, Keras, scikit-learn, PyTorch	OSs Familiarity	Windows, Linux, OS X
Web based	$HTML_5$, CSS_3, JavaScript	Software	MySQL Workbench, Eclipse, Visual Studio, LaTeX, RStudio

Research Interests

Deep Learning	Theoretical aspects of Deep Learning: Meta-Learning, Transfer/Multi-task Learning, Few-shot Learning, Reinforcement Learning, Bayesian Inference
Multi-modal Machine Learning	Synergies between vision and language models, multi-modal semantic extraction, general purpose architectures
Machine Learning for Health Studies	Genomic text-mining, Biomedical Imaging

Past Projects

○ **LGM**-**Classification**. LGM-Classification is a python library implementing a full Machine Learning workflow for training classification algorithms on annotated POI datasets and producing models for the accurate classification of Points of Interest (POIs) into categories. Code on Github

- **LGM-Geocoding**. LGM-Geocoding is a python library which implements a full Machine Learning workflow for training classification algorithms on annotated datasets that contain mappings between coordinate pairs and the ideal geocoding source for them and producing models for providing accurate predictions about ideal geocoding sources for previously unseen geocoding pairs. Code on Github

- **LGM-PolygonClassification**. LGM-PolygonClassification is a python library that implements a full Machine Learning workflow for training classification algorithms on annotated datasets that contain pairs of matched polygons each one of which belongs to a distinct polygon variant. Code on Github

- **Rotamer-Pair Clustering**. Successfully extended the M.Sc. thesis of Anaxagoras Fotopoulos and Athanasios Papathanasiou by introducing the c-RMSD and d-RMSD distances to the k-means algorithm. This project, written in Matlab, was co-supervised by Prof. Ioannis Emiris and Assoc. Prof. Evangelia Chrysina.

- **Nucleosome Positioning Pattern Recognition**. Genomic text-mining JAVA application. Developed for my B.Sc. thesis using *Weka Data Mining Software*, the *Jahmm* Library and *JInsect* Toolkit. Code on Github

Honors & Awards

- 1st position (National) and 1st position (European) in Night of the Living Devs hackathon (Organized by Microsoft Co.).

- Offered and accepted research internship by the Inria GALEN Team and the Center for Visual Computing of Ecole Centrale de Paris, starting in early 2017.

- Scholarship for Undergraduate Internships (Full financial support from the European Union).

- Honorary Award in Poetry by the International Art Society

- Participation in Mediterranean Days @ Campus SophiaTech, France (Full financial support)

- EFG Scholarship for the best MSc thesis, MSc in Data Science.

References

Academic

- Prof. Vangelis Markakis
- Prof. Ioannis Emiris
- Prof. Panagiotis Stamatopoulos
- Dr. George Giannakopoulos
- Dr. Evangelia Zacharaki

Vocational

Amongst others:
- Dr. Giorgos Giannopoulos
- Dr. Minas Koulisianis, and
- Alexandros Voyatzis

(more upon request)