Velli Maria-Christina
Curriculum Vitae

PERSONAL INFORMATION

Mail	mvelli@physics.uoc.gr
Birth	November 21, 1992
Address	Tylisou 4, 71201, Heraklion, Crete, Greece.
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EDUCATION

PhD. Student   07/2019 - Now
University of Crete

Thesis: "Development of machine learning algorithms in ultrafast laser materials processing" under the co-supervision of Dr. Stratakis and Prof. Tsironis.

MSc. in Advanced Physics   10/2016 - 03/2018
University of Crete

Diploma grade: "Very Good" 7.20/10.00. Total ECTS awarded: 66.

Courses Attended: Advanced Classical Mechanics, Classical Electrodynamics, Mathematical Methods for Physics, High Energy Astrophysics, Quantum Many-Particle Systems, Astrophysics III

BSc. in Physics   10/2011 - 10/2016
University of Crete

Diploma grade: "Very Good" 7.89/10.00. Total ECTS awarded: 240.

SKILLS

Languages	Greek: mother tongue English: Fluent (F.C.E., University of Cambridge)
Software	PYTHON, LATEX, FORTRAN, MATLAB, C++
Driving licence	B
Hobbies	Carpentry, Paintball, Airsoft

RESEARCH EXPERIENCE

PhD Candidate   04/2019 - Now
Ultrafast Laser Micro and Nano Processing Laboratory – IESL, FORTH

Here, in the context that materials irradiated with multiple laser pulses develop various types of biomimetic morphologies, we want to study this phenomenon both experimentally and theoretically. My part focusses on 2 areas:

1) Development of Machine Learning based algorithms to predict optimal parameters of the laser. This is in order to improve the time-consuming and costly nature of the experiments.

2) Modeling and simulating laser-mater interaction.

Post-Graduate Work   02/2018 - 06/2018
University of Crete, Department of Physics

Weeakly meetings between master's, PhD and post-doc level people in order to discuss and apply statistical methods and Machine Learning tools that can be used in Astrophysics (and in big data sets in general). Skills acquired are: clasificasion, regresion and clustering algorithms which were tested on real data such as GAIA and SDSS. These algorithms where implemented using PYTHON, and more specificly packages such as sklearn, statistics, scipy and astroML.

Graduate Research   09/2017 - 03/2018

University of Crete, Department of Physics

Completed my master thesis under the supervision of Profesor Pavlidou Vasiliki. At my thesis, entitled "Assessment of the localizability of Ultra-High Energy Cosmic-Ray (UHECR) sources through next-generation optopolarimetric experiments", I aquired several skills and knowledge such as:

- Significance measurements tools (Li & Ma Statistics)

- Cosmic-Ray Physics

- Code:
    - Using PYTHON packages such as matplotlib, astropy, numpy.
    - Developed and implemented my own code oriented to the needs of the problem

- Gamma-Ray Astronomy

SUMMER SCHOOLS

Hadron Physics Summer School 2018   September 24-28

(Selected with Special Grand)

Forschungszentrum Jülich, Germany

The school was offered as part of the master curriculum of the Bonn University (phys 721), and corresponds to 4 ECTS for which we participated in classes and gave a presentation of the results of our working group. Certificate acquired by Prof. Dr. B. Kubis: Intensive Week in Advanced Topics in Hadron Physics.

TEACHING EXPERIENCE

"Advanced Physics Laboratory I, Univercity of Crete"   Fall Semester 2016 & 2019

Teaching Assistant on undergraduate Laboratory

CONFERENCES & WORKSHOPS

- "EUSMI & NFFA Europe Joint School on Data Management ", Trieste, Italy , 10 & 11 December 2019.

- "Computational Intelligence in Remote Sensing and Astrophysics" Workshop , Institute of Computer Science - F.O.R.T.H., Heraklion, Crete, July 2019.

- "FOSSCOMM 2018 (Free and Open Source Software Communities Meeting), Computer Science Department,University of Crete, October 2018

- "Computational Intelligence in Astrophysics" Workshop , Institute of Computer Science - F.O.R.T.H., Heraklion, Crete, July 2018.

- "Quantum physics frontiers explored with cold atoms, molecules and photons", The ONASSIS FOUNDATION, 2017 Science Lecture Series in Physics.

- "Alternative Gravity and Alternative Matter" Workshop , ITCP - Department of Physics, Heraklion, Crete, May 2015.

REFERENCES

Dr. Stratakis Emmanuel	Research Director Foundation of Research and Technology Hellas, IESL e-mail: stratak@iesl.forth.gr