# George Arvanitakis

## ML & Data Science Researcher

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*"I am a researcher in the field of Machine Learning (both traditional statistical-learning and neural networks), with a PhD in applied mathematics for network performance analysis. I have a strong mathematical background (probability theory, statistical inference, information theory, modeling, data analytics) and my main interests are in applying mathematical tools to solve real problems."*

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## Working Experience

2020/now **Lead Research Engineer, National Observatory of Athens**
National Observatory of Athens - Beyond team, Athens, Greece.
Design the architecture and guide the development of an early warning Mosquito-Borne Diseases ML system, by processing time-series Erth Observational data from satellites and epidemiological data in order to predict the risk for the upcoming months.

2018 - 2020 **Senior Research Engineer, Huawei**
Huawei mathematical and algorithmic sciences lab, Paris, France.
○ "**Precise" Project:** Low precision Neural Networks or **Binary Neural Networks**. Design and implement the elements for a neural network architecture (data preprocessing, activation functions, cost function, solvers, etc.) that requires a minimum space complexity for training and storage.
○ "**Xloc" Project:** ML for indoor localization
Apply ML techniques for localization problems (feature engineering, representation learning, dimensionality reduction, neural networks).

2017 - 2018 **Postdoctoral Researcher, INRIA**
Laboratoire Informatique Grenoble - Team: Performance analysis and Optimisation of Large Infrastructures and Systems, Grenoble, France.
Study the behavior and performance of ML algorithms when the data distribution is not i.i.d., but is dependent on the learning algorithm itself (linear regression, game theory, analytical approximations).

2017 (Jun - Nov) **Postdoctoral Researcher (Intern), Max Planck Institute**
Max Planck Institute - Software Systems, Saarbrucken, Germany.
Research on algorithmic fairness: develop a framework for detecting if (i) an algorithm's decision took into account sensitive data, (ii) an algorithm has been trained with biased data (spectral clustering, anomaly detection, graph theory).

2014 - 2017 **Ph.D., Applied Mathematics and Modeling for Wireless Networks, Telecom ParisTech**
Mobile Communications Dept., EURECOM, Sophia-Antipolis, France.

Topics: applied mathematics, stochastic geometry, stochastic processes, analytic modeling, wireless heterogeneous networks.

## Education

2014 - 2017 **Ph.D., Applied Mathematics and Modeling for Wireless Networks, Telecom ParisTech**
Mobile Communications Dept., EURECOM, Sophia-Antipolis, France.

2011 - 2013 **MSc, Radio Engineering, NKUA**
Physics & Informatics Dept., National Kapodistrian University of Athens, Greece.

2006 - 2011 **BSc, Physics, NKUA**
Physics Dept., National Kapodistrian University of Athens, Greece.

## Technical Skills

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|---|---|
| Analytic | Probabilities & Statistical Analysis, Information & Coding Theory, Stochastic Geometry, Estimation Theory, Modeling, Graph Theory, Game Theory. |
| Programming | Python, MATLAB. |
| Machine Learning | Neural Networks, Statistical Learning, Dimensionality Reduction, Clustering, Anomaly Detection, Representation Learning, Feature Engineering, Supervised Learning Models, Statistical Inference. |

## Awards / Distinctions

2022 **EIC Prize 5M,** for our Early Warning System for Mosquito-Borne Diseases (EYWA) that I had the Technical Lead in National Observatory of Athens, European Innovation Council 2022.

2021 **Runner-up Cisco Best Paper Award** for the paper "Fairness in Network-Friendly Recommendations", IEEE WoWMoM 2021, Pisa, Italy.

2019 **Postdoctoral Research Grant**, Greek Directorate of Scholarships (IKY), duration 2 years (2020-2021) [Dropped].

2018 **Runner-up for Best paper award** for the paper "Potential for discrimination in online targeted advertising", ACM FAT conference 2018, New-York, USA.

2015 **Student award**, €1K, for the paper "Power-based localization in correlated log-normal fading aided by conditioning measurements".

2011 **First of my class**, Sector: Electronics, Computer Science, Telecommunications and Control of Physics Department, Average Grade: 8.78/10

Patents/Papers **3 filed Patents** and **15 reviewed publications**, a detailed list can be found at: https://scholar.google.com/citations?user=r2itY4IAAAAJ&hl=en