Vasileios Papapanagiotou, PhD

Computer & Data Scientist

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https://www.linkedin.com/in/papapana
https://github.com/papapana
http://bit.ly/scholar_vassilis

Work Experience

June 2020 (Current) — Zürich, Switzerland

Data Scientist, Associate Director

UBS

Accomplishments

Developed and established various high-stakes financial crime analytics initiatives and found real and potential internal and external risks by leveraging the available massive structured and unstructured datasets.

Proficient different types of financial data and in all stages of a typical data science project lifecycle (sourcing, cleaning, exploring, labelling, clustering, aggregating and getting business insights)

Assisted orchestrating the full-cycle development, deployment and support of a web-based risk assessment tool for legal entities, deployed globally.

Oversaw a team of 3 developers, co-designing the system architecture, conducting code reviews and played a hands-on role for the development of microservices.

Leveraged technologies such as Python, Pandas, Typescript / Javascript, Dask, Elasticsearch, SQL, Scikit-Learn, Git, Linux.

April 2017 - May 2020 — Zürich, Switzerland

Data Scientist

Nexxiot AG

Accomplishments

Orchestrated the design and development of an end-to-end a near real-time solution engineered to infer geoevents, compute routes and distance traveled by assets

Prioritized software reliability, availability and scalability

Trained and supervised 2 other developers for the continued development of the aforementioned service

Achieved 0.1% error in computing the real-world mileage of assets as measured independently by clients with initial requirements of 5%

Extensive use of Git, Python, Pandas, Numpy, Scikit-Learn, PyTorch, AWS, C++17, PostgresSQL, Docker

August 2012 - August 2016 — Lugano, Switzerland

Associate Researcher/Engineer in AI (PhD)

Swiss AI lab (IDSIA) - University of Lugano

Accomplishments

Engaged in cutting-edge applied research in Artificial Intelligence, at the Swiss AI lab world-renowned for its pioneering research in Ant Colony Optimization and the LSTM neural networks

Actively Involved in grant writing, scientific papers' reviews, and co-authored 14 peer-reviewed papers (most as main author)

Regularly presented and elucidated scientific findings in multiple international peer-reviewed conferences

Extensively used C++, Python, R, dplyr, ggplot, Matlab and various machine learning packages

May 2010 - June 2012 — Athens, Greece

Freelance Software Engineer

Accomplishments

Brought to fruition an innovative proprietary framework akin to "Wordpress for Flash" for Single Page Apps, used to create Rich Internet Applications for several companies

Extensively used PHP, MySQL, Javascript, Actionscript

September 2006 - December 2009 — Patras, Greece

R&D Engineer

Computer Technology Institute

R&D Software for the Greek Academic Research Network

About

Seasoned Data Scientist and Software Engineer with an avid interest in finance, big data, mission-critical software and AI underscored by a proven track record in developing and deploying software for the industries of Banking, IoT, logistics, research institutions and private clients. Proven Expertise in Data Science and Analytics, Software Engineering, Machine Learning, Optimization and Deep Learning; PhD in Computer Science with specialization in Artificial Intelligence from the world-renowned Swiss AI lab (IDSIA - Dalle Molle Institute for Artificial Intelligence)

Skills & Competences

- Python
- Linux
- SQL
- Git, Gitlab & Github
- Typescript / Javascript
- Java
- C++
- Data Science & Analytics
- Machine Learning

Experienced

Dask, Pandas, PySpark, Mission-Critical Applications, Software Performance, AWS cloud deployment, Docker, CI/CD, Java, Natural Language Processing (NLP), Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN, LSTM), Generative Adversarial Networks (GAN)

Education

September 2012 - September 2018 — Lugano, Switzerland

Doctor of Philosophy (PhD) in Artificial Intelligence and Computer Science

IDSIA (Swiss AI Lab) / University of Lugano

Thesis: *"Efficient combinatorial optimization algorithms for logistic problems"*

advised by Prof. Luca Maria Gambardella Prof. Jürgen Schmidhuber world-renowned for their work in Ant Colony Optimization and Deep Learning respectively

More than 14 research publications in peer-reviewed journals and conferences, see http://bit.ly/scholar_vassilis

September 2008 - September 2010 — Rio, Achaia, Greece

MSc, Computer Science and Technology

University of Patras

Thesis: *"Adjustable cross-layer algorithms for multimedia data transmission and power management in wireless networks"*

September 2003 - September 2008 — Rio, Achaia, Greece

Dipl.Eng, Computer Engineering and Informatics

University of Patras

Thesis: *"Study and Testing of Layer 2 Quality of Service Provisioning Mechanisms"*

5 year Engineering Degree

Languages

Greek *(native)*
Italian *(B2)*
German *(B1 - ongoing)*
English *(C2)*
French *(B1-B2)*

Research & Grant Writing / Reviewing Experience

- Involved in writing research grant proposals that were accepted by the Swiss National Science Foundation (usually 40% acceptance rate)
- Served as a reviewer for multiple scientific papers in international peer-reviewed conferences as well as journals in Operations Research
- **Metaheuristic Optimization, Artificial Intelligence and Operations Research:** authored/co-authored 14 research papers in peer-reviewed journals and conferences
- **Wireless networks:** co-authored 4 research papers in peer-reviewed journals and conferences
- **Wired networks:** and I co-authored in 1 peer-reviewed conference paper and in 1 peer-reviewed journal paper

For a full list see http://bit.ly/scholar_vassilis

Notable Publications

- **Objective function evaluation methods for the orienteering problem with stochastic travel and service times**. V. Papapanagiotou et al. Journal of Applied Operational Research, 6(1):16 29, 2014
- **Hybrid sampling based evaluators for the orienteering problem with stochastic travel and service times**. V. Papapanagiotou et al. Journal of Traffic and Logistics Engineering Vol, 3(2), 2015
- **A comparison of two exact algorithms for the sequential ordering problem**. V. Papapanagiotou et al. In 2015 IEEE Conference on System, Process and Control (ICSPC 2015)
- **Ant colony optimization for a 2-stage capacitated vehicle routing problem with probabilistic demand increases.**. N.E. Toklu, V. Papapanagiotou et al. International Journal of Business Innovation and Research, Special Issue on: Decision-Making Under Uncertainty Models and Approaches, 2014
- **Power management adaptation techniques for video transmission over TFRC.** Bouras, A Gkamas, V Kapoulas, V Papapanagiotou, K Stamos, International Journal of Network Management 21 (5), 414-431
- **Extending QoS support from Layer 3 to Layer 2.** C Bouras, V Kapoulas, V Papapanagiotou, L Poulopoulos, D Primpas, Telecommunications, 2008. ICT 2008. International Conference on, 1-7

Notable Projects

Here I list some of the machine learning projects I have done in my personal time and during courses. They are all available at https://github.com/papapana.

- **Microservice for exploring the Iris Dataset**. Tools: Python, FastAPI, MongoDB, Docker, Docker-Compose
- **Sentiment Analysis using LSTM neural networks and deployment in AWS Sagemaker and AWS Lambda**. Tools: Python, PyTorch, Amazon Sagemaker, Amazon Lambda
- **TV Script Generation (Seinfeld) with LSTM Recurrent Neural Networks**. Tools: Python, PyTorch
- **Human faces generator using Generative Adversarial Networks (GANs)**. Tools: Python, PyTorch
- **Bikesharing patterns prediction using Custom Neural Networks**. Tools: Python, Numpy
- **Dog Breed Classification using Convolutional Neural Networks from scratch and with Transfer Learning**. Tools: Python and PyTorch
- **Solving the Traveling Salesman Problem using C++ and analysis in Python**. Tools: C++11, Python, CERN ROOT framework