Christos Mitropoulos

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Summary

Experienced Data Scientist with strong Data/Machine Learning Engineering skills that has mainly worked in the invalid traffic and fraud detection space and has a Cyber Security research background. Interested in full stack roles and solving problems end-to-end, from research to deployment and performance monitoring.

Experience

- **Oracle Advertising - MOAT** — New York, NY
  Senior Data Scientist - Data Engineer — *Jun. 2019 – present*

  My day to day responsibilities range from building end-to-end Machine Learning systems for identifying ad fraud using unsupervised and supervised techniques, to performing exploratory data analysis on ad measurement data for developing new invalid traffic detection methodologies.

  - Developed Machine Learning based IP reputation metrics to flag suspicious IPs, while minimizing False positives.
  - Built internal IP-Intelligence system that is responsible ingesting Terabytes of data daily and generating features. The system has monitoring and autoscaling capabilities and was built with cloud native tools.
  - Automated and modernized a legacy data pipeline for producing quarterly Benchmarks across different cuts of our data. Decreased the engineering effort from 2.5 weeks to approximately 2 days, while making it easier to implement new features and product requests.
  - Tools: Python, scikit-learn, pandas, spark, pymc, SQL, linux, Airflow, Docker, Kubernetes, Argo Workflows, Grafana, Prometheus
  - Areas: Time-series analysis, anomaly detection, unsupervised / supervised learning, clustering, bayesian statistics, NLP

- **Perspecta Labs (former Vencore Labs, Applied Communication Sciences)** — Baskin Ridge, NJ
  Cyber Security Research Intern — *Jun. 2018 – Aug. 2018*
  - Developing botnets of the Fast Flux family, on top of the CyberVAN tesbed.
  - Evaluating the performance of the botnets using intrusion detection systems and machine learning based techniques.
  - Tools: C++, Winsock, GoLang, Python, Linux and Windows operating systems.

- **Rutgers, The State University of New Jersey** — New Brunswick, NJ
  Research Assistant - HCI & Security Engineering Lab - Advisor: Prof. Janne Lindqvist — *Sep. 2016 – May 2019*
  - Forgetting of Passwords: Ecological Theory and Data - published in USENIX Security '18 (top tier Cyber Security conference)
    - Responsible for the neural network estimation of a password's strength section of the paper.
  - Machine Learning and Social Protocols for Enhancing Spectrum Access
    - Designed experiments for measuring user behavior under lossy networks and network connectivity sharing choices.
    - Developed a novel video quality metric for longer videos, taking into account video freeze and frame distortions.
    - Built a web-based tool to facilitate data collection.
  - Analyze System Administrators' Vulnerability-handling Behavior
    - Data mining on IPv4 network scanners and disclosed vulnerabilities datasets.
    - Applied exploratory data analysis methods and created models with predictive power.

- **Rutgers, The State University of New Jersey** — New Brunswick, NJ
  Lead Teaching Assistant - Computer Architecture Lab — *Sep. 2016 – May 2019*
  - Teaching Assembly MIPS to approximately 80 students.
  - Preparing and grading lab assignments.

- **Rutgers, The State University of New Jersey** — New Brunswick, NJ
  Research Internship — *Jun. 2014 – Sep. 2014*
  - Research Areas: Pattern Recognition, Machine Learning, Security and Privacy, Human Computer Interaction

- **Digi4sites.com** Athens, Greece
  Software Engineer *Jun. 2012– Sep. 2014*
  - Responsibilities: Developing custom websites using HTML, CSS, jQuery, MySQL; Server administration using Amazon Web Services (AWS) tools.

Education

- **Rutgers, The State University of New Jersey, HCI & Security Engineering Lab** New Brunswick, NJ
  Masters in Electrical and Computer Engineering ; Advisor: Prof Janne Lindqvist; GPA: 3.9 *Sep. 2016 – May 2019*
  - **Courses**: Massive Data Mining and Learning, Parallel and Distributed Computing, Software Engineering, Regression Analysis, Security Engineering, Operating Systems
  - **Online courses**: Neural Networks and Deep Learning
- **National Technical University of Athens (NTUA)** Athens, Greece
  Masters of Engineering in Electrical and Computer Engineering; GPA 3.6 *Sep. 2010 – Sep. 2015*
  - **Thesis**: Created an android based **Gesture Authentication System** using Machine Learning Models, Hidden Markov Models; Grade 10/10
  - **Courses**: Artificial Intelligence, Databases and Information Systems Engineering, Algorithms and Data Structures, Programming Languages, Computer - Communication - Mobile Networks

Programming Skills

- **Languages**: Java, Python, C/C++, MATLAB, Javascript, SQL
- **Frameworks/Libraries**: Scikit Learn, Pandas, Hadoop, SQL, AirFlow, Kubernetes, Argo, pthreads, ISPC, Django,
- **OS**: Linux, Windows

Honors and Awards

- **2018**: Winner of the Rutgers State University TA/GA Development Fund
- **2017**: Winner of the Gerondelis Foundation Grant

Academic Service

- **SOUPS 2017, 2018**: External Reviewer
- **WWW 2018**: External Reviewer
- **IMWUT 2017**: External Reviewer

Papers

- Xianyi Gao, Yulong Yang, Can Liu, **Christos Mitropoulos**, Oulasvirta Antti, Janne Lindqvist. "Forgetting of Passwords: Ecological Theory and Data",USENIX Security '18