Tornike Onoprishvili

Data Scientist & Lecturer

Phone: +955 579 11 85 83

Address: Didi dighomi, Rostevani 8a

Website: http://tornikeo.github.io/

Email: tonop15@freeuni.edu.ge

Junior Data Scientist & Lecturer with two peer-reviewed research papers and a hands-on data analysis experience.

EXPERIENCE

Orient Logic

April 2019 - September 2020

Data scientist

During my work I have developed:

- a Georgian chat-bot using **Watson studio** by IBM and Flask server backend.
- Collaborated on developing a credit-card fraud detection system using Isolation Forest from Scikit-learn.

Free university of Tbilisi

October 2019 - Present

Lecturer

After obtaining my degree, I was invited as a lecturer at Free University of Tbilisi. During my course I taught binary logic, CPU architecture and Assembler programming. Some of the material used in the lectures **can be seen here**.

EDUCATION

Free university of Tbilisi

September 2015 - October 2019

Bachelor of Engineering in Electrical and Computer Engineering

SKILLS

- Languages: Python, C++, SQL, Java, Javascript
- Mathematics: Linear Algebra, Regression, Gradient Boosting, Clustering
- ML libraries: Tensorflow 2.0, SKlearn, Pandas, OpenCV
- Visualisation Libraries: Matplotlib, Seaborn
- Automation Tools: Bash, Fabric
- Version Control: Git, Github
- Testing Tools: Selenium
- Data Scraping Libraries: Scrapy, BeautifulSoup
- Containerization Tools: Docker
- WebDev Tools: Flask, Django
- IDEs: Jupyter notebook, VSCode, IntelliJ

PUBLICATIONS

Functional all-optical logic gates for true time-domain signal processing in nonlinear photonic crystal waveguides

Issue 12 (2020)

Optics Express

Building on top of the previous paper, here we proposed building a NAND logical gate, which, when properly implemented, can be used to build and **actual** computer, using photonic circuits.

See: Vakhtang Jandieri, Ramaz Khomeriki, Tornike Onoprishvili, Douglas H. Werner, Jamal Berakdar, and Daniel Erni, "Functional all-optical logic gates for true time-domain signal processing in nonlinear photonic crystal waveguides," Opt. Express 28, 18317-18331 (2020)

Digital signal processing in coupled photonic crystal waveguides

Issue 4/2019

and its application to an all-optical AND logic gate

Optical and Quantum Electronics

While working on this publication, I performed large-scale numerical simulations using MATLAB. I also wrote most of the LaTeX used in rendering the mathematical equations.

See: Jandieri, Vakhtang & Onoprishvili, Tornike & Khomeriki, Ramaz & Erni, Daniel & Pistora, Jaromir. (2019). Digital signal processing in coupled photonic crystal waveguides and its application to an all-optical AND logic gate. Optical and Quantum Electronics. 51. article 121. 10.1007/s11082-019-1833-9.

PROJECTS

Tbilisi Housing Price Prediction

September 2020 - Present

https://www.kaggle.com/tornikeonoprishvili/tbilisi-housing-challenge-2020

Scraped, cleaned and performed analysis on several Georgian house retail sites, such as MyHome.ge in order to create an automatic price regression system.

Published data to Kaggle and performed more thorough using Scikit-Learn and XGBoost. The dataset has over 1000 views, as of Dec 1 2020.

Personal website

May 2020 - July 2020

http://tornikeo.github.io/

Developed a fully functional resume web-site from scratch.

Educational videos on YouTube

January 2018 - June 2019

https://www.youtube.com/channel/UCOeqTCUJ-nwZtuZM1KIOR8A/videos

Created educational videos for my coursemates.

CONFERENCES

PIERS 2018 Toyama

1 - 4 August 2018

Presented our paper at PIERS conference in Japan, Toyama

We were invited to present our paper at PIERS conference in Japan, Toyama. I presented our Meeting with such a number of professionals and experiencing the Japanese culture.

PIERS 2019 Rome

17 - 20 June 2019

Presented our next paper at PIERS conference in Italy, Rome

Once again, we presented our work at PIERS conference in Rome.

LANGUAGES

English (Full professional proficiency - C1 (TOEFL)), **Russian** (Professional working proficiency - B2), **Georgian** (Native or bilingual proficiency), **German** (A2)