VITALY ROMANOV

MACHINE LEARNING RESEARCHER

Date of Birth:
17.04.1992

Nationality: Russia

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GitHub:
VitalyRomanov

Google Scholar:
Vitaly Romanov @ Innopolis University

Profile:
Interested in creating smart applications that solve challenging problems using the tools of Machine Learning and Data Analysis.

Areas of Expertise:
Deep Learning, Neural Networks, Graph Neural Networks, Natural Language Processing, Text Generation, Data Analysis, Data Science, Big Data, Cloud Services, Statistics, Digital Signal Processing, SQL/NoSQL Databases, Electronics, Wireless Communication

Technologies:
Torch, Tensorflow, Keras, DGL, Sklearn, Numpy, Pandas, Spark, Jupyter, CUDA, Docker, Linux

Programming Languages:
Python, Julia, C/C++, Matlab, SQL, Scala

Languages:
English (Advanced), Russian (Native), German (Beginner)

Experience

Researcher @ Innopolis University, Innopolis, Russia
March 2020 - Now

- Developed a tool for transforming source code into a graph (repository on GitHub)
- Implemented two new approaches for creating embeddings based on a graph representation of source code (using Graph Neural Networks), tested embeddings on the task of variable type prediction for Python, published 4 articles
- Implemented a model that combines existing NLP embeddings and graph embeddings for better prediction accuracy

Data Analyst @ Innopolis University, Innopolis, Russia
November 2021 - February 2022

- Implemented logic to perform data analytics for an online educational platform
- Performed prognosis of future user activity on the service based on service usage history

Machine Learning Expert @ Innopolis University, Innopolis, Russia
December 2019 - March 2020

- Developed part of the educational program and materials on machine learning approaches (decision trees, randomized forests, extremely randomized trees, anomaly detection)
- Organized the machine learning team to propose ways of using machine learning for defect detection based on sensor data for the client's needs (neural networks, CNNs, model ensembles, bagging, boosting, model cascades)
- Prepared a report for the client

Engineer @ Sputnik, Kazan, Russia
September 2019 - November 2019

- Developed echo cancellation for an intercom system

NLP Engineer @ GetCoder, Innopolis, Russia
November 2017 - May 2020

- Developed text clusterization tool for grouping relevant news together
- Maintained tool for proofreading news articles
- Developed a tool for Knowledge Graph construction and visualization

Instructor @ Innopolis University, Innopolis, Russia
August 2016 - March 2020

- Prepared course materials and taught: Advanced Machine Learning, Advanced Information Retrieval, Advanced Statistics, Randomized Algorithms, Computer Architecture, Big Data, SQL/NoSQL Databases, Cloud Computing, Digital Signal Processing
- Performed research: Positioning with WiFi, Deep Learning for NLP, Application of Graph Neural Networks to Source Code Analysis, see Google Scholar profile for more details
- Supervised student projects

Engineer @ Research lab at Kazan National Technical University, Kazan, Russia
January 2013 - May 2014

- Developed a digital signal processing pipeline for the transmitter-receiver module using National Instruments hardware.

Education

- **PhD** (thesis defense pending) **in Computer Science** — circa 2023
  Innopolis University, Innopolis, Russia
  Specialty: Machine Learning
  Topic: Novel Method for Creating Source Code Embeddings with Graph Neural Networks
- **MSc in Electrical Engineering** (GPA 4.0) — 2016
  University of Arkansas, Fayetteville, AR, USA
  Specialty: Wireless Communication
  Topic: Probabilistic Methods for Quickest Fault Detection in Wind Turbines
- **BSc in Radio Electronics** — 2014
  Kazan National Technical University, Kazan, Russia
  Specialty: Radio-electronics systems
  Topic: Hardware Algorithm for Airborne Transmitter using National Instruments Hardware.

Public Presentations

- JetBrains Research Seminar, Online, March 2022
- ruSTEP Research Seminar, Online, February 2022
- ICEIS Conference, Online, April 2021, May 2020
- SPLASH Conference, Online, November 2020
- NLPIR Conference, Japan, July 2019
- NAACL Conference, US, June 2019
- WiMo Conference, Austria, May 2018