Ioana-Andreea Cristescu

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EDUCATION

University of Richmond, Richmond, VA *May 2024*
Bachelor of Science: Computer Science, Mathematics; Minor: Integrated Science GPA: 4.0

- **Honors:** Richmond Scholars Program (full academic scholarship awarded to 0.2% of the applicants)

Awards

- **Finalist,** ISS Finals, Zero Robotics Tournament (organized by MIT, NASA, and ESA), Boston 2019
- **Bronze Medalist,** National Phase, Romanian Mathematics Olympiad, Romania 2016-2019

SKILLS

- **Technical:** Python, C/C++, Java, R, SQL
- **Software and Cloud:** Linux/Unix, Git, AWS Lambda, DynamoDB, SQS, Smithy, Babel, AFL
- **Web & Design:** HTML, CSS, PHP, JavaScript, TypeScript, React, NodeJS
- **Machine Learning:** TensorFlow, PyTorch, Keras, AutoGluon, SageMaker

WORK EXPERIENCE

Amazon Web Services **Seattle, WA**
Software Development Engineer Intern May-August 2023

- Reengineered team's framework core into an AFL like feedback-driven fuzzer for web application security scanning
- Improved the framework's URL scanning coverage by 46% by developing Babel instrumentation plugins for branches, function calls, and API object property access, and enabling the alteration of API return values
- Developed a five-level challenge ladder of React web apps to test and scale the instrumentation

Data Science Department, University of Richmond **Richmond, VA**
Machine Learning Research Assistant March-May 2023

- Analyzed Android and iOS sensing data for ADHD diagnosis, extracting key features from raw activity data
- Gathered weekly self-reported ADHD scores from patients, calculating correlations with activity features
- Optimized and evaluated machine learning models (SVM with RBF kernel, Random Forest, XGBoost) for ADHD prediction, achieving a top F1 score of 0.86

Data Science Institute, University of Chicago and Fermilab **Chicago, IL**
Data Science Research Assistant June-December 2022

- Conducted mass analysis of galaxy clusters, contributing to a forthcoming publication in the Royal Astronomical Society journal on particle physics and cosmic expansion
- Developed a Python-based simulation for generating optical views of galaxy clusters using colossus and astropy libraries and by incorporating optical beam convolution and Gaussian noise
- Evaluated the efficacy and constraints of several deep learning algorithms, including CNN, DenseNet, ResNet, and Bayesian Neural Networks via TensorFlow

Axians **Portugal**
Data Science Intern July-August 2021

- Collaborated on a 6-person team project, analyzing Google Earth Engine geospatial data to study vegetation encroachment impact on power line constructions
- Utilized Random Forest algorithm for pixel and geographic feature classification, achieving accuracy of 96.7% (low-density vegetation) and 96.9% (high-density vegetation)
- Preprocessed Sentinel-2 data, employing cloud masking and vegetation indices (NDVI, EVI)

Computer Science Department, University of Richmond **Richmond, VA**
Computer Science Research Assistant May-July 2021

- Developed a C++ linear programming algorithm to address factors leading to inequity in the US liver allocation system, using projected event sequences (patient registration, liver donation, death)
- Implemented Minimum Cost Maximum Flow algorithm for future simulation and demonstrated inefficiency of Greedy and Max Flow approaches

LEADERSHIP EXPERIENCE

Association for Computing Machinery
Education Chair January 2021- Present

- Launched a new Mentor-Mentee program to pair people with same interest for guidance and mentorship
- Guided the development of an app for the university's psychological health services that assists with students' mental health and well-being