Laura Chirila

6340 Main St, Houston, TX 77005 | laura.chirila@rice.edu | (832) 404-1108 | linkedin.com/in/laura-chirila | laurachirila.com

EDUCATION

Rice University

Bachelor of Science in Computer Science

Relevant Coursework: Algorithmic Thinking, Fundamentals of Computer Engineering, Design Thinking, Introduction to Program Design, Probability and Statistics, Multivariable Calculus, Introduction to Computer Systems, Tools and Models for Data Science, Reasoning about Algorithms, Linear Algebra, Concurrent Program Design, Tech Product Design and Development

EXPERIENCE

Magnolia River Services

Data Scientist Development Intern

- Developed an AI-powered Personal Protective Equipment (PPE) detection system using YOLOv8, achieving 0.808 mAP50 accuracy to enhance workplace safety for 500+ field workers across 30+ states
- Managed the end-to-end ML lifecycle: processed 3,000+ images, conducted 21 training sessions across two pilot phases, and fine-tuned hyperparameters to achieve optimal model performance, resulting in a 23% accuracy improvement
- Researched the optimal deployment architecture, comparing SageMaker Endpoints (real-time) and AWS Lambda (serverless) for cost, inference accuracy, and response time, ultimately reducing latency by 35% while maintaining high accuracy
- Developed a Flask-based REST API and React front-end, achieving <150ms average response time and seamless integration with the existing FieldLogIQ app, enabling PPE validation directly within existing workflows

Rice University – Department of Electrical and Computer Engineering Research Intern

- Worked in a team of 11 undergraduate students under Dr. Joseph Young to develop a real-time person ID/re-ID and 3D localization system for use on mobile platforms
- Revamped the person detection and tracking pipeline for the re-identification model, enhancing computational speed and accuracy by 50% through the integration of YOLOv7
- Achieved 8% performance increases using silhouette pre-training and incremental learning with Dynamic Siamese Network as an alternative to state-of-the-art solutions for person re-identification Timisoara, Romania

Politehnica University of Timisoara

Research Intern, First Author

Project: CXR-based diagnosis of COVID-19 using Deep Learning with CycleGAN for Data Augmentation

- Applied transfer learning on multiple pre-trained models for COVID-19 diagnosis using Chest X-Ray scans
- Employed CycleGAN to generate COVID-positive images, balancing the COVIDx V8B dataset and increasing its size
- Achieved substantial performance improvement with F1 scores rising in six of the seven models tested, with the best score increasing from 93.52% to 94.28%
- Published paper at IEEE International Conference on e-Health and Bioengineering 2021

PROJECTS

Forex Price Prediction | Python, TensorFlow, Pandas, Numpy

- Implemented a dual LSTM model that uses 7 technical indicators and key macroeconomic factors to predict EUR/USD price movements; achieved 58% profitability on unseen price data
- cROvid-GO | HTML, CSS, JavaScript, Python, TensorFlow, Keras, Flask
- November 2020 Led back-end development of a progressive web app offering AI-based COVID-19 case predictions using LSTM and real-time heatmaps of crowded areas. Achieved accurate forecasting with a Keras-implemented RNN and serviced predictions via a Flask API **March 2020**

COVID-Z | HTML, CSS, JavaScript, Bootstrap, Python, TensorFlow, Keras, Flask, Linux

- Designed and developed a web platform enabling medical staff to diagnose COVID-19 using X-rays through a ResNet50 model, which achieved 98% accuracy on the test set
- Addressed data scarcity by compiling a unique dataset of 625 images; ensured data privacy by implementing post-diagnosis image deletion and employed image validation for non-X-ray uploads; resolved model deployment challenges on a cloud server Qubit | Python, Java, TensorFlow, OpenCV, Intel OpenVINO, Flask, FTC SDK, Raspberry Pi
- Developed the software for a Raspberry Pi powered autonomous waste-collecting robot employing real-time object detection using MobileNet SSD V2 on Intel Neural Compute Stick 2, yielding an average of 8.31 FPS

LEADERSHIP & ACTIVITIES

Rice Electric Vehicle

Perception for Autonomous Driving Team Lead

Implemented deep learning algorithms for object detection in a simulated autonomous driving environment

Managed and optimized software development team of 4 developers, decreasing the time to deployment by 30%

American Institute of Aeronautics and Astronautics - Rice University Chapter

- SUAS Computer Vision Software Developer
- Implemented machine learning algorithms in TensorFlow for object classification and GeoTagging on low-resolution aerial images
- Achieved seamless integration between Pixhawk flight controller and Raspberry Pi, enabling efficient communication and sharing of precise target geolocation data

SKILLS

Technical: Python, Java, C#, C/C++, Go, Git, Linux, ROS; Web Development: HTML, CSS, JavaScript, TypeScript, PHP, SQL, Bootstrap, WordPress, React, Node.js, Flask, REST APIs, Spark, Hadoop; Deep Learning: TensorFlow, Keras, PyTorch, Pandas, Numpy, OpenCV, AWS: SageMaker, Lambda, EC2, S3, IAM, CloudFormation, CLI, API Gateway, Bedrock, Textract

Language: English – Full Professional, Japanese – Elementary, Romanian – Native or Bilingual

November 2022 – *May* 2023

Houston, TX, USA

Houston, TX, USA

Decatur, AL, USA

May 2024 – August 2024

Graduation Date: May 2026

December 2022

August 2021 – September 2021

May 2019

October 2022 – August 2023

September 2022 – August 2023

Houston, TX, USA

Houston, TX, USA