# Sina Fallah Ardizi

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## Education

**New York University** Sep 2020 – May 2024
Bachelor of Science, Computer Engineering New York, NY

- *Relevant coursework: Artificial Intelligence, Computer Architecture, Computer Networking, Data Structures and Algorithms, Databases, Embedded Systems, Java and Web Design, Machine Learning, Operating Systems*

## Skills

*Programming Languages:* Python, Java, C, C++, SQL, HTML
*Development:* Test Driven Development, Debugging, Kanban
*Technologies: ML, AWS, Git/*GitHub, NoSQL, Docker, Node.js, CI/CD, React, REST API, Kubernetes, Jenkins, MongoDB, TCP/IP

## Experience

**Teacher Assistant (Data Structures and Algorithms)** | Python Sep 2022 – May 2024
New York University New York, NY

- Taught Data Structures and Algorithms to 150+ students.
- Conducted weekly programming classes, enhanced students' code efficiency, and achieved a 93% satisfaction rate.
- Created LeetCode-style questions and innovative teaching strategies, leading to a 33% increase in class engagement.

**Machine Learning Engineer** | Python, Linux, Git, Google Colab Sep 2022 – Sep 2023
Flexible AI-enabled Mechatronic Systems Lab (FAMS) New York, NY

- Developed an Object Recognition ML model and trained it using YOLOv5 for a surgical robotic arm.
- Led a team of 6 to develop a kinematics-based movement algorithm, increasing arm accuracy from 40% to 85%.

**Robotics Instructor** | C++, Arduino Jun 2023 – Jul 2023
STEM Montessori Academy of Canada Toronto, ON

- Taught students how to design circuits using Arduino boards, servos, and other electrical components.
- Provided instruction in C++ concepts tailored for control system applications.
- Created course structure and course material, such as questions, slides, review sheets, and homework.

## Projects

**News Bias Analysis (SWEES)** | Python, GitHub, MongoDB, React, LangChain Oct 2023 – May 2024
A web application that analyzes news article bias via user-submitted links or text inputs.

- Led a team of 5 students, delegated tasks, and conducted weekly meetings to address issues and track progress.
- Drove full-stack development, programmed endpoints, architected user, and article databases, and executed comprehensive test cases, ensuring the project was delivered on time and met all specifications.
- Integrated an AI model into the app, using Mongo Atlas and LangChain, and incorporated web scraping.

**Personal Learning Assistant (PAL)** | Java, SQL, HTML Apr 2024 – May 2024
An educational application designed to enhance learning experiences by enabling users to manage academic resources.

- Engineered a full-stack application with JDBC integration, secure login, and frontend/backend management.

**Air Ticket Reservation System** | Python, SQL, Flask, HTML Sep 2023 – Dec 2023
A web application enabling customer flight bookings and airline staff management of flight and aircraft data.

- Developed a relational SQL database to manage tickets, staff, etc., including schema design and implementation.
- Engineered a full-stack application with login sections for users and staff, flight search by destination and date, etc.

**Handheld Messenger Device** | C++, PlatformIO Sep 2023 – Dec 2023
A portable device equipped with an ATmega32u4 microprocessor and sensors, designed for secure message transmission.

- Programmed the microprocessor to convert hand motions received from an accelerometer into unique LED patterns.

**Google Stock's Closing Price Prediction and Classification** | Python Mar 2023 – May 2023
An ML model that forecasts stock closing prices and performs binary classification on price trends.

- Preprocessed the Yahoo Finance dataset, normalized the features, and partitioned it into training and validation sets.
- Engineered ML models using linear regression, neural networks, and logistic regression for stock price forecasting.

## Publications

**Inference Offers a Metric to Constrain Dynamical Models of Neutrino Flavor Transportation**

Armstrong, E., Patwardhan, A. V., Rrapaj, E., Fallah Ardizi, S., Fuller, G. (2020). Inference offers a metric to constrain dynamical models of neutrino flavor transportation. Physical Review D,102(4), 043013. https://doi.org/10.1103/PhysRevD.102.043013