Vahideh Ghanbari (She/Her)

Linkedin - Github

Languages: Python, SQL, MATLAB/Simulink, C++, HTML5, CSS3, JavaScript/TypeScript
Libraries: PyTorch, TensorFlow, Scikit-learn, Fast.ai, Flask, React
Certifications: Machine Learning, Neural Networks, and Deep Learning
Other: Optimization, Mathematical Programming

EDUCATION

University of Notre Dame, *Ph.D. & M.S. in Electrical Engineering* 2017
Optimized and designed advanced learning controllers for large-scale, nonlinear, complex hybrid systems using energy-based control methods

PERSONAL APPLICATIONS

Data Science & Software Development
Movie Lovers (Machine Learning: A Movie Recommendation App)
Technologies: PyTorch, Fast.ai, React, Redux, Flask, TypeScript, PostgreSQL, HTML, CSS, Pandas, Web Forms, JSON
- Engineered a full-stack multi-page web application with a React frontend and Flask backend that provides users with movie suggestions using a machine learning algorithm, Recommender Systems
- Applied a collaborative filtering algorithm to 25 million ratings dataset from MovieLens to build the machine learning model for movie suggestions
- Analyzed the data in Google Colab and found the most efficient mini-batch size to minimize the validation loss
- Wrote Python script to create a RESTful API to store, create, delete, and update a user's movie rating data and input blog entries in a database by using Flask and PostgreSQL
- Designed user dashboard to support asynchronous tasks such as getting movie suggestions from backend and movie posters from TMDB API to show suggested movies' posters
- Programmed CSS, HTML, and JavaScript to design layout for homepage, dashboard, and sign-in/sign-up

EXPERIENCE

Coding Temple - Data Scientist 09/2021 - Present
Technologies: TensorFlow, Scikit-learn, React, Flask, JavaScript, HTML, CSS, PostgreSQL, Matplotlib
- Script a Python code to build an automated financial assisting calculator using OOP to validate benefits of recommendations with loss and gains
- Create a portfolio website using React to render a single page application and Material UI components to make it responsive to all screen sizes
- Design a weather application with adaptive background based on the various conditions that were pulled from a public API
- Program a CRM Python script to handle automated sales invoices through ticketing and validating data
- Architect ERD of application and generated various SQL tables in PostgreSQL to validate client inventory systems

Personal Projects - Machine Learning & Deep Learning 04/2020- 08/2021
Technologies: Python, TensorFlow, MATLAB, NumPy, Jupyter Notebook, Google Colab, Visual Studio Code, Anaconda
- Implemented a linear regression model using MATLAB to predict a food business profits based on the city populations
- Coded principal component analysis (PCA) in TensorFlow for object recognition with low-dimensional representation
- Detected failing servers on a communication network by applying an anomaly detection algorithm using MATLAB

University of Florida - Research Fellow 05/2016 - 08/2018
- Designed and Introduced, for the first time, an optimized advanced learning controller by applying the energy-based control methods (passivity) to a motorized nonlinear cycle-rider hybrid system
- Achieved the optimized tracking performance, error of less than 5%, for the therapeutic cycling system induced by Functional Electrical Stimulation (FES) with seven participants by implementing the learning controller via MATLAB/Simulink

University of Notre Dame - Graduate Student Researcher 01/2012 - 05/2017
- Optimized the switched controller's performance by applying the energy-based control methods in Adaptive Cruise Control (ACC) and Lane Keeping Control (LKC), using MATLAB/Simulink and CarSim
- Designed switched controllers using a unique passivation method for hybrid systems to circumvent the challenges of traditional methods
- Simplified the complexity of multi-agent systems by employing the concept of symmetry and passivity to study the stability of large-scale systems
- Assisted in teaching the graduate course Linear Systems and undergraduate course Signals & Systems