Justin Italiano

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Education

Master of Computer and Information Technology August 2023
University of Pennsylvania, Philadelphia, PA Cumulative GPA: 3.84

Master of Science in Civil Engineering May 2019
University of Massachusetts, Amherst, MA Cumulative GPA: 4.0

Bachelor of Science in Civil and Environmental Engineering December 2014
University of Massachusetts, Amherst, MA Cumulative GPA: 3.53

Skills

Python, Java, C, C++, JavaScript, TypeScript, HTML, CSS, R, SQL, Git, Docker, PyTorch, Django, React, WPF (.NET)

Professional Experience

Software Engineer—FTL Labs Corporation, Amherst, MA February 2024—June 2026

- Developed full-stack software across multiple SBIR (Small Business Innovation Research) projects, building web applications with Python, Django, JavaScript/TypeScript, and React and desktop applications with WPF (.NET), and containerizing and deploying services with Docker.
- Led the company's first Department of Transportation (DOT) project, authoring the winning Phase I proposal and expanding the firm's work beyond its longstanding focus on Department of Defense (DoD) contracts.
- Served as the project's Principal Investigator, executing the Phase I effort, coordinating meetings with the government Technical Point of Contact (TPOC), writing reports, and delivering presentations.

Transportation Engineer—DVRPC , Philadelphia, PA May 2019—June 2022

- Worked collaboratively with other engineers and planners to apply a complex regional travel demand model to ongoing projects and obtain forecasts for future traffic volumes and transit ridership in the Delaware Valley region.
- Developed a new, more efficient post-processing Python script that processed model run results and tabulated them into Excel files for later use in other analyses.
- Diagnosed and fixed model crashes and other computer bugs.
- Utilized MOVES, an emission modeling system, in conjunction with the regional travel demand model to determine the effect of transportation projects on regional air quality.
- Helped write clear and concise reports and documentation for all projects.

Research Assistant—University of Massachusetts, Amherst, MA January 2018—May 2019

- Analyzed comprehensive operational data including mileage, GPS, on-time-performance, and fueling data from the Pioneer Valley Transit Authority Paratransit Van Service using R, SQL, and Excel.
- Developed a model to predict delay experienced by passengers using the paratransit service.
- Studied data from the Massachusetts Bay Transportation Authority and used a clustering analysis to predict how a passenger's choice of transportation was affected by an experimental pilot program.

Projects

Scrabble Game—Python August 2023

- Created a scrabble game in Python using Pygame that enables users to compete against the computer.
- Implemented a trie data structure to store the dictionary and facilitate fast lookup of words and prefixes.
- Developed an algorithm that allows the computer to generate high scoring moves extremely quickly.

PennSearch—C++ Group Project April 2023

- Parsed network topology data and constructed a routing table for each node using link state and distance vector routing protocols in the NS-3 network simulator.
- Implemented chord, a distributed hash table, as an overlay network, and built a keyword-based search engine on top of it that published document metadata to the network and performed distributed searches.

Sudoku Solver—Python February 2023

- Designed a program that read a partially filled sudoku board and used inference, the Arc Consistency (AC-3) algorithm, and backtracking to efficiently find a solution.

Coursework

Artificial Intelligence, Big Data Analytics, Natural Language Processing, Networked Systems, Computer Systems Programming, Algorithms and Computation, Data Structures and Software Design