

# Mark Mitri

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## EDUCATION

Lehigh University, Bethlehem, PA

May 2023

### Bachelor of Science in Computer Engineering

**Relevant Coursework:** Software Engineering, Computer Architecture, Introduction to Data Science, Microcontroller Laboratory, Web Systems Programming, Senior Project Design, FPGA Lab, Introduction to Artificial Intelligence

## TECHNICAL SKILLS/LANGUAGE PROFICIENCY

Computer skills: Git, Agile Methodology, RStudio, Office 365, Excel, JIRA, SOLIDWORKS, xTuple, Arduino

Electrical skills: Multimeters, Soldering, Microcontrollers, Oscilloscopes, Breadboarding

Software skills: JavaScript, HTML/CSS, Rust, R, MATLAB, Java, C/C++

Language proficiency: English (Native), Arabic (Intermediate)

## PROFESSIONAL EXPERIENCE

**Enterprise Resource Technical Lead Internship | RR-Racing | Exton, PA**

July - August 2020

- Successfully transitioned from Quickbooks to xTuple enterprise resource software.
- Directed data cleanup and migration of **1000+** items, customers, and vendors into spreadsheets.
- Developed CSV atlases to merge complex customer data, mapping **20+** data points for a flawless replacement.

**IT Consultant Work Study | Lehigh Technology Service | Bethlehem, PA**

September 2019 - May 2023

- Managed the Student Technology and Repair Service (**STARS**), overseeing technical support for **300+** students.
- Provided expert technical support for software and hardware repairs, including data backups using ycopy, virus removal through Malwarebytes, and software re-installation within Windows and Mac systems.
- Created tickets in JIRA for effective tracking and documentation of the progress for each student.

## SOFTWARE PROJECTS

**Personal Website:** [mmitri.github.io](https://mmitri.github.io) (for additional information and projects)

**Ultimate Tic-Tac-Toe**

May 2023

- Designed a two-player web game called Ultimate Tic-Tac-Toe, played on a larger 9x9 grid.
- Utilized: Javascript, HTML/CSS

**Word Search Game**

May 2023

- Developed the client-side web application for a multi-player word search game.
- Integrated socket.io library for client-server communication.
- Utilized: Javascript, HTML/CSS, socket.io, node

**AsaLang | Programming Language Built on Rust**

January - May 2023

- Developed a lexer in Rust for efficient tokenization and pattern recognition for 11 categories of ASCII characters.
- Constructed a grammar and parser to translate lexical tokens into abstract syntax trees to write and call functions, do math, and return values.
- Implemented an interpreter enabling the execution of code using a Value enum and Runtime struct to manage variable bindings and function definitions.
- Utilized: Rust, nom library, stack runtime

**Data Analysis of Traffic Violations**

December 2022

- Produced a statistical analysis of traffic stops in Maryland correlating car type and receiving a ticket, sifting through 1.8M data points.
- Created Naive Bayes, logistic regression, KNN, and decision tree models to highlight the potential correlation, with a max recall of 70%, precision of 70%, and accuracy of 65%.
- Utilized: RStudio, e1071 library

**Social Media App Development**

August - December 2022

- Launched a Social Media App with a team of five using Agile methodologies, rotating roles, and 2-week sprints.
- Coded the cloud-based front end with JS, HTML/CSS, and React, utilizing Maven for build and execution.
- Implemented Google's OAuth, REST API & CRUD resource management, and a backend server hosted on Heroku.
- Utilized: Javascript, HTML/CSS, React, Maven, Git, Trello, RESTful Architecture

## ADDITIONAL EXPERIENCE

**Engineer | Lehigh Formula Society of Automotive Engineering | Bethlehem, PA**

*September 2019 - May 2023*

### *Team Lead - Aerodynamics subsystem*

- Orchestrated a high-performing team of 4 in planning and producing 3 groundbreaking aerodynamic projects.
- Manufactured the team's 1<sup>st</sup> carbon composite aerodynamics kit with **15** elements, generating **155** lbs of downforce.
- Initial design in SOLIDWORKS, precise cutting of foam for the molds, then carbon fiber layup process with epoxy.

### *Designer - Aerodynamics subsystem*

- Designed and manufactured carbon composite nosecone and sidepod, reducing the frontal area and weight by **25%**.
- Conducted comparative analysis of **5** undertray profiles, validating a downforce of **50** lbs.
- Organized an **18**-page technical document about aerodynamics and vehicle properties for seamless knowledge transfer.

### *Member - Chassis & Suspension Team*

- Re-modeled and manufactured **10** chassis jigs using SOLIDWORKS, improving production time by **15%**.
- Collaborated with a team to fabricate **4** carbon composite A-arms, achieving a **50%** weight reduction.

### *Accomplishments*

- Ranked **6/100** in business presentation, **27/99** in design event, and **2/100** in weight.
- Ranked **7/100** in business presentation, **16/111** in cost event, and **2/121** in weight.

**Senior Capstone Project: Electronic Signal Visualizer | Lehigh University**

*August 2022 - May 2023*

- Created a mechanical system that produces a Fourier transform visualization from 3 stepper motors.
- Researched sensor specifications and programmed the system using Arduino MEGA IDE.
- Hands-on experience in a lab with oscilloscopes, multi-meters, troubleshooting sensors and motors, and soldering.
- Integrated 3D modeling and printing, laser cutting, machining, and soldering for successful execution.