Josue N. Rivera

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"I am a 21-year-old passionate computer scientist with an interest in Machine Learning, Neural Networks, Image Processing and 3D Mapping. I am also an avid learner who looks for any opportunity that I can to learn and use the newly acquired knowledge for self-improvement and the betterment of the world around me."

EDUCATION

Master of Science | University of Massachusetts Dartmouth   May 2020
- o **Concentration:** Computer Science | **GPA:** 4.0
- o **Thesis Topic:** Continual Lifelong Learning with Graph Neural Networks
- o **Courses Taken or Taking:** Algorithms and Complexity; Advanced Computer Systems; Advanced Data Mining; Digital Forensic; Theoretical Computer Science;

Bachelor | University of Massachusetts Dartmouth   December 2019
- o **Major:** Computer Science | **GPA:** 3.91
- o **Honors, Leaderships and Awards:**
  - ▪ *Endeavor Scholar*: Prestigious scholarship given for academic merit, leadership and civic engagement
  - ▪ *Newman Fellow*: Nationwide recognition given to change-makers and public problem-solvers
  - ▪ *Commonwealth Honors Student*: Massachusetts Department of Higher Education's Honor Program
  - ▪ *29 Who Shine Award Recipient*: Award given by the Dept. of Higher Education and State Governor
  - ▪ *University Civic Engagement Award Recipient*: Given to a student who made an impact in the campus
  - ▪ *Chancellor's List*: Inducted in a list of students who have earned a GPA of 3.8 or higher

Lawrence High School Diploma | Math, Science and Technology High School   June 2016
- o **Honors, Leaderships and Awards**: Valedictorian; L'Pin award recipient;

PROFESSIONAL EXPERIENCE

Researcher | University of Texas at Dallas   May 2019 – August 2019
- o Worked as a researcher at the University of Texas at Dallas through the National Science Foundation Research Experiences for Undergraduate (REU) Program
- o More information on the research can be found under Technical Experience **

Research Assistant | UMass Dartmouth   September 2017 – May 2019
- o Research assistant for Dr. Maoyuan Sun (Interests: Data Visualization and Human-Centered ML)
- o Worked on numerous projects regarding natural language processing and context understanding
- o Most memorable project: Context understanding in police report using machine learning

TECHNICAL EXPERIENCE

Research | A Comparison of the Reliability between Traditional ML and DL **   May 2019 – August 2019
- o Conducted research focused on the area of software safety and reliability in collaboration with Dr. Eric Wong at the University of Texas at Dallas. The team conducted a deep analysis on the reliability of various machine learning models, radiologists and deep learning techniques in detecting breast cancer stage. The goal of the paper was to provide empirical data that can either support or oppose the use of deep learning in critical situation where reliability is a priority.
- o The research was presented by a colleague and I at the 2019 REU Symposium in Washington, DC

Senior Design Project | 3D Geometry Foot   September 2018 – May 2019
- o Developed a classical machine learning algorithm that can reconstruct 3D models of human feet from images and find their measurements
- o The project *3D Geometry Foot* consisted of a smartphone application that can scan and send data (images, phone rotation, etc.) to a server where the algorithm tries to construct a model of the individual's feet
- o I oversaw the algorithm design and the implementation of it

Video Game Development | Runner-Z   January 2018 – May 2018
- o Designed a video game for the Intellivision console of 1979
- o The game incorporated some modern game design concept while working with the limitation of the hardware
- o The game was completely written in BASIC with some Assembly for data management

Python Library Development | CleverAI   January 2018 – Present
- o Currently designing a personalized Neural Network library from scratch
- o The library is being constructed with an Object-Oriented Approach in mind that will allow for the construction of complex non-standard neural networks while keeping decent speed compared to tensor-based libraries

PerkinsHack "Privacy, Please!" Winning Project | EZForm   April 2018
- o A text reader for images with textual context that allows blind individuals to fill out forms in private
- o The web application will read to blind individuals the text found in any kind of form. It will stop when it sees a question and wait for the individual to either respond with their voice or type the answer on a keyboard. This information is saved and send to a recipient
- o Privacy is at the heart of the project by saving most information anonymously and storing it locally

TECHINICAL SKILL

Programming Languages, Libraries and Others:
- o Fluent: Python; C; Java; HTML; CSS; JavaScript; Node.js; R; MATLAB; Basic; SQL; Git; JSON; XML; OpenCV; TensorFlow; Keras; Unix commands; Linux servers;
- o Familiar: C++; PHP; jQuery; Bootstrap; Tizen;

Software:
- o Fluent: Blender 3D; Arduino; Adobe Creative Cloud; Microsoft Office 365;
- o Familiar: Android Studio; Tizen Studio; Unity 3D; Godot; Resolve; SolidWorks;

Languages:
- o Fluent: Spanish; English;

Frameworks:
- o Fluent: Scrum; Agile Development; UML; Unit Testing;
- o Familiar: Integration Testing;

LEADERSHIP EXPERIENCE

Treasurer | UMass Dartmouth Big Data Club   September 2018 – Present
- o The club focuses on building models to understand trends in large amount of data and understanding new machine learning models
- o Member of a team of students that won one of the categories and was runner up for the other two at the 2019 Annual Data Fest Competition

President | UMass Dartmouth Animation Club   September 2017 – Present
- o Lead weekly meeting where we teach, discuss and appreciate various kinds of animation including 2D, 3D and stop-motion
- o Collaborated on the foundation of the Animation Club Annual Film Festival that showcases some of the local talents

Delegate | UMass Dartmouth Model United Nations   September 2017 – Present
- o Discuss global issues and possible solutions at the international week-long NMUN Conference in New York City
- o Previous topics discussed included: Improving Emergency Response Capacities to Safeguard Food Security and The Role of Urbanization in Sustainable Development

UMass Dartmouth Representative | Leduc Center for Civic Engagement   September 2017 – Present
- o Member of the Community Advisory Board
- o Serve as the student representative who brings forth the opinions and concerns of the students on the work that is being done at the Leduc Center

Ambassador | UMass Dartmouth College of Engineering   May 2019 – Present
- o Selected ambassador for the College of Engineering
- o Represent the college of engineering to the community through participation in recruiting events, etc.

Senator | UMass Dartmouth Student Government Association   September 2017 – May 2019
- o   Civic Engagement Committee Chair (2017 - 2019)
- o   Senator for the Class of 2020 (2017-2018), Senator for the College of Engineering (2018-2019)
- o   Helped pass dozens of policies that positively affect the lives of many students at the campus
- o   As chair, led campaigns to build volunteerism spirit among the student body and assisted the Leduc Center for Civic Engagement with the organization of major events: Share the Harvest, etc.

Chair | UMass Dartmouth Gaming Society   January 2018 – May 2019
- o   Chair of the Anime Club and member of the executive board
- o   Conducted weekly meeting that involved that discussion of anime and the news behind this Japanese animation style
- o   Collaborated on the 12 hours Gaming Society's Powerup charity event to support Toys for Tots

CIVIC ENGAGEMENT EXPERIENCE

CIS Mentor | CIS Dept. UMass Dartmouth – Dartmouth, MA   January 2019 – Present
- o   Volunteer to mentor/tutor undergraduate students in a wide range of computer science courses
- o   Dedicate 8+ hours weekly to assist students

Leduc Leader | Leduc Center for Civic Engagement   September 2016 – Present
- o   Conduct and lead community service events that gets college students involve in their community
- o   Serve over 20+ of community service weekly during the 2018-2019 academic year
- o   Gave over 20+ talks on the importance of community service and the benefits of volunteerism

Volunteer | Food Pantry: Arnie's Cupboard   September 2016 – Present
- o   Help provide food to students, staff, faculty and community members in need at the university
- o   Previously, selected as volunteer of the year

STEM Teacher Volunteer | Fall River YMCA   November 2016 – May 2019
- o   Taught the STEM class that involved Computer Programming, Physics, Engineering and Robotics
- o   One of the main projects consisted of a car the uses that energy stored in a mouse trap to move itself

HOBBIES

Pool/Billiard
- o   Amateur billiard player
- o   Champion of 2018 Annual Pool Tournament at UMass Dartmouth
- o   Practice 5 - 8 hours weekly

Painting/Drawing
- o   Amateur artist
- o   In the past, I mainly focused on acrylic paintings, but recently started doing more digital drawing
- o   My most popular work is an acrylic painting of Neil Armstrong in Space

Golf
- o   Casual golf player
- o   Former member of the varsity team in high school. I have enjoyed the game ever since

Game Design
- o   Designed 5+ games in various platforms in the last few years
- o   Created RunnerZ for the Intellivision console and a web based interactive version of the popular math game Nim, among others
- o   Experience with Game Engines such as Unity3D, Godot, Roblox Studio and WebGL based ones

Robotics/Electronics
- o   Former member and programming leader of FIRST Robotic Team 1289
- o   Former referee for FIRST Lego Robotic Competition
- o   Taught classes on electronics, robotics and Arduino to high and middle schoolers

Web Design
- o   Developed various website using technology such as WebGL, HTML 5, CSS3, Bootstrap, etc.
- o   Designed the former website for FIRST Robotic Team 1289, my personal site and various other pages