Jose Ruben Espinoza

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Personal Profile

Currently a Master's in Computer Science student at The University of Texas Rio Grande Valley while simultaneously working as an educator at a local high school. Possess a strong background in both programming and mathematics. Experienced working at a Fortune 500 company conducting business analysis and automation with both local and global stakeholders.

Work Experience

La Joya Independent School District

La Joya, TX

High School Mathematics Teacher

Oct 2018 - Current

- Responsible for the emotional and intellectual growth of numerous students within the realm of mathematics and computer science. Developed lesson plans based on district and state guidelines. Preformed analysis on student, homework, and quiz data to drive instruction and ensure student success.
- Taught the following courses: Geometry, Algebra II, Engineer Your World II (Python, RaspberryPi), Computer Programming I (Java), Fundamentals of Computer Science (Python, HTML, Javascript, cybersecurity and networking basics), AP Computer Science Principles (Javascript).
- Participated as a teacher liaison for the school district's High School Teacher Forum and Site-Based Decision Making Committee.
- Served as a UIL coach for Computer Science and Debate teams at the high school level. Major accomplishments involved coaching the 2022 District winners (Regionals bound) in my local area for computer science and having a CX debate team reach the State championships for Debate UIL.
- Served as Contest Director for the UIL Computer Science 3A District 31 contest. Served as Assistant Contest Director for UIL Computer Science 6A District 31 contest. Tasks included testing Java based code against judging data and assigning roles to support staff as needed. Verified and supported the certification of scores.
- Consulted students on technological science fair projects. Student projects mainly involved programming in Python for RaspberryPi project development. Assisted students on implementing solutions for robotics.
- Utilized JavaScript/AppScript to automatically create and share Google Drive Folders to individual teachers for end of year evaluation evidence submission. Additionally created a system to automatically send emails and messasges to students defined within an excel sheets using AppScript.
- **Technical Skills:** Python, Java, Mathematics, HTML, Excel, JavaScript
- **Soft Skills:** Management, Time Management, Communication, Presentation skills.

The University of Texas Rio Grande Valley

Edinburg, Texas

Graduate Research Assistant

Jul 2022 - Aug 2022

- Conducted research for the Machine Learning Lab in reinforcement learning and applied pose estimation.
- Utilized Google's MoveNet model to build a rule based system to classify when educators, within the context of a classroom setting, use big gestures and no gestures to drive instruction.
- Participated in research meetings to share research progress and assist in implementing solutions to other software projects.
- **Technical Skills:** Python, NumPy, Pandas, OpenCV, Tensorflow.
- **Soft Skills:** Communication, Logical Thinking, Project Management.

Citicorp Credit Svcs USA

Irving, Texas

Assistant Vice President–Workforce Cap Intermediate Analyst

Jun 2016 - Jun 2018

- Forecasted inbound call volume trends for the assigned customer service portfolio for a given day.
- Conducted ad hoc business analysis and reporting to ensure contractual metrics (average speed of answer, abandons, service level goals) with business partners were met.
- Served as a liaison between multiple contact centers (Operations), IT, and the Irving Command Center to maintain an optimized workforce personnel (100+).
- Provided initial Windows and networking troubleshooting services for contact center personnel and escalated issues to Incident Management as needed. Provided impact reports to Operations leadership and updated ServiceNow tickets as needed.
- Identified and implemented business process improvements as a member of the Innovation Team using Excel (macros), PowerShell, and SQL. Automated startups for workforce analysts using PowerShell scripts within the first month of employment. Maintained databases and improved extraction of data using SQL.
- Served as the emergency remote point of contact workforce analyst in the event of a need for continuity of business plan implementation with the Manila Philippines Command Center.
- **Technical Skills:** Excel, PowerShell, SQL, Microsoft Office.
- **Soft Skills:** Communication, Leadership, Management, Business Process Improvement.

University of Texas-Pan American *Edinburg, Texas*

Laboratory Assistant *Oct 2014 - May 2015*

- Maintained hardware and software in the Experimental Algebra and Geometry Lab (EAGL).
- Installed software updates and troubleshot problems on Linux-based (Ubuntu/Fedora) computers.
- Operated and calibrated a Makerbot (3D printer) and a Digitizer (3D scanner).
- Designed and 3D printed mathematical objects using Mathematica and various other software which were showcased at various outreach and research events.
- **Technical Skills:** Mathematica, Linux, 3D Printing, 3D Scanning.
- **Soft Skills:** Customer Service, Research, Project Management.

University of Texas-Pan American *Edinburg, Texas*

Undergraduate Research Intern *Sept 2013 - May 2014*

- Conducted research and wrote Mathematica code to generate data on an abstract algebra project titled Special Words in Free Groups.
- Graded linear algebra exams for an undergraduate junior level course.
- Managed Linux-based software and hardware installations for the EAGL research lab.
- **Technical Skills:** Mathematica, Linux, 3D Printing.
- **Soft Skills:** Customer Service, Research.

Education

The University of Texas Rio Grande Valley *Edinburg, TX*

MS in Computer Science *Aug 2021 - Current*

- Skills: Python, C++, Rust, Google Cloud, Socket Programming, Flask, Windows Server, Linux
- **Courses:** Advanced Machine Learning, Advanced Networking, Design and Analysis of Algorithms, Information Retrieval and Web Search, Cryptography, Theory of Computation, Advanced Operating Systems, Advanced Database Design and Implementation

University of Texas-Pan American *Edinburg, TX*

BS in Mathematics *Aug 2012 - Jul 2015*

- Skills: Mathematica, Matlab, Linux, Data Analysis
- **Senior Courses:** Boundary Value Problems, Complex Variables, Differential Topology, Elementary Cryptology, Mathematics Project, Modern Algebra I, Modern Geometries, Number Theory, Probability and Statistics, Real Analysis I, Topology

South Texas College *McAllen, TX*

AA in Interdisciplinary Studies *Jun 2009 - May 2012*

- Skills: Excel, Word, PowerPoint

Presentations/Projects

ServiceZ: `https://github.com/0x17io/database_servicez` *Edinburg, TX*

University of Texas Rio Grande Valley - CSCI 6333 Advanced Database Design and Implementation *Spring 2023*

- **Project Summary:** The goal of this project is to connect contractors and service providers, to clients. A particular emphasis is placed on ensuring that clients are able to quickly pick a contractor that fits their particular needs through an online portal. Through the online portal clients are able to browse through contractors that fit their particular needs while simultaneously contractors are able to solicit their services and rates. Clients will be able to view reviews of particular contractors they are interested in to ensure that they pick the best contractor that fits their unique situation. Once clients have picked a contractor, the online portal provides a means through which they process orders and confirm transactions.
- **Technical Skills:** AWS, Python, Django, HTML, Javascript, MySQL, LaTeX, Linux.

Fully Homomorphic Encryption Within The Context Of Educational Information Systems: *Edinburg, TX*
`https://github.com/0x17io/gpa_fhe_implementation`

University of Texas Rio Grande Valley - CSCI: 6370 - Cryptography *Fall 2022*

- **Project Summary:** In 2021 researchers at Google released a FHE scheme which can run computations on encrypted data without revealing the underlying data. This transpiler can convert high level C++ code that works on unencrypted data into high level code that operates on encrypted data. We specifically aim to use the new FHE scheme/transpiler and implement a novel solution to ensure FERPA data/computation is protected. We aim to implement FHE using pseudo student data such as grades which are normally protected by FERPA. We focus on specifically creating a server which can run average grade computations on encrypted data which could then be returned securely to an end user.
- **Technical Skills:** Google Cloud, C++, Python (client), Rust (server), Docker, Github, LaTeX, Linux.

Simple Encrpytion Systems *Edinburg, TX*

University of Texas Rio Grande Valley - CSCI: 6370 - Cryptography *Fall 2022*

- **Project Summary:** Implementation of RSA algorithm via C++ using the boost library for large number computation. Additionally, the implementation of DES encryption algorithm utilizing Python.
  C++ RSA: `https://github.com/0x17io/basic_rsa`
  Python DES: `https://github.com/0x17io/python_des_implementation`
- **Technical Skills:** C++, Python, Linux.

zeeSearchEngine: `https://github.com/0x17io/optimized_SearchEngine` *Edinburg, TX*

University of Texas Rio Grande Valley - CSCI 6373 Information Retrieval and Web Search *Summer 2022*

- **Project Summary:** Vector search engine project implementation taking a web crawling based approach on given zip file composed of 17.9 MB worth of data containing various linked htm and html files.
- **Technical Skills:** Google Cloud, Python, Flask, HTML, Javascript, LaTeX, Linux.

Minimizing Perplexity On A Legal Responsive Language Model *Edinburg, TX*

University of Texas Rio Grande Valley - CSCI 6352 Advanced Machine Learning *November 11, 2021*

- **Paper Abstract:** Language models are at the core of many natural language processing problems ranging from speech recognition to text generation. Within this paper we show the results of taking a deep learning approach to develop a language model that utilizes both a character based and word based methods to best predict the next word given a sequence of text. Of particular focus is on using long short-term memory and gated recurrent units neural networking to develop a language model with low perplexity. In order to build our language model, we use a unique corpus text obtained by web scraping the Texas Constitution and Statues webpage. In the end we show that the best language model that could be used to develop the language model using our specific corpus text is long short-term memory.
- **Technical Skills:** Python, Numpy, Keras, Tensorflow.

A Brief Introduction to Quaternions *Edinburg, TX*

University of Texas-Pan American - Secret Student Seminar *February 27, 2015*

- **Technical Skills:** Mathematica.

Mathematical Models for Brain Tumor Growth *Edinburg, TX*

University of Texas-Pan American - Applied Mathematics Seminar *December 3, 2014*

- **Technical Skills:** Matlab.

Special Words in the Free Group of Rank 2 *Edinburg, TX*

University of Texas-Pan American - Secret Student Seminar *December 6, 2013*

- **Technical Skills:** Mathematica.

Skills

Programming	C++, C, Python (Tensorflow, Keras, Numpy), Matlab, Mathematica, PowerShell, SQL, Javascript, Java, Rust
Operating Systems	Windows, Linux (Ubuntu, Fedora)
Applications	Excel (VBA), Word, Access, Aspect Workforce Management, Google Docs, Google Sheets, Google Forms
Soft Skills	Communication, Leadership, Teamwork, Creative Problem Solving, Time Management

Languages

English	Native proficiency
Spanish	Native proficiency
French	Bilingual basic reading proficiency

References available upon request.