Resume

Steven Valenzuela

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Education

Bachelors of Science Mechanical Engineering	Graduated December 2019
Minor in Mathematics	GPA 3.23

6 semester hours shy of a Masters in Mechanical Engineering

6 semester hours shy of a Certificate in Systems Engineering

Affiliations

- The American Society of Professional Estimating (ASPE)

Certifications

Construction Certifications	Programming Certifications	CAD Certification
• OSHA 30 • OSHA 30 – Aerial and Scissor Lifts	• MATLAB Fundamentals • MATLAB Onramp • MATLAB Object-Oriented Programming Onramp • Simulink Onramp • MATLAB Optimization Onramp • Introduction to Symbolic Math with MATLAB	• Fusion360 Intro to 3D Modeling for Manufacturing

Skills

- Bilingual, able to read and write in Spanish.
- Programming with Python, Matlab/Simulink, C++
- Proficient with Microsoft Teams, Word, Excel, PowerPoint, WSL2
- Proficient with Linux and Git
- Familiarity Raspberry Pis, Arduino and PX4/Ardupilot flight control architectures
- Modeling, Simulating and implementations of robotics with ROS, ROS2 and Gazebo.
- Computer Aided Desing using AutoCAD, Siemens NX, SolidWorks and Fusion 360

Work Experience

Beltran Electrical Contractor Part 2

El Paso, TX

Electrical Estimator

September 2023 – Current

- In this second round at Beltran, I have been awarded two Acute Behavior Centers. Strategically won in hopes to add customer as a client for future service work. I also help manage these two projects. I have received positive feedback that my numbers have been used for a Fire Station Headquarters, A Children's Home, some large residential apartments and was first of four in pricing a Pre-K addition for Gadsden ISD.
- Cultivating a partnership with Johnson Controls. This provided Beltran with the opportunity to do the low voltage wiring for the upcoming VA Hospital as well as Gadsden Middle School. This meant gaining further knowledge in the NFPA 72, National Fire Alarm and Signaling Code. Hoping to leverage this and add to Beltran's capabilities.
- Cultivating another partnership with a local Mechanical Plumbing contractor to better compete against other local Mechanical Electrical Plumbing contractors.
- Introduced a bid log to keep track of our percentages and general contractor's feedback. Introduced project logs to keep track of projects. Created a robust proposal template. Created and added capabilities statements to proposal. Created a master bid schedule for whenever we were bidding on multiple projects. These efforts have resulted in the purchase order of a $100,000 service project
- Created budgets for out-of-town school projects over in Fort Stockton and Pecos. Received feedback from BTC that pricing was broken down adequately and up to par with other quotes. Currently in final rounds for both projects. Created a budget for Hunt Mesa 7, a new mixed used rental apartment & retail community containing approximately 252 dwelling units and approximately 10,500 SF of retail space.

Work Experience *(Beltran Electrical continued)* _____

- Started the creation of a design to build team to be able to provide more comfortable estimates for upcoming warehouses. Most recent projects: Thor Logistics and Eastwind Logistics for Saxum. This required testing all our suppliers and collaborating with Gear Rep from Schnieder Electric, Cummins generator rep and some lighting reps.
- Starting to bid industrial projects in preparation for El Paso Water Utilities' expansion such as Westway Booster Station and The Hospitals of Providence Gas Farm relocation. Estimating these projects meant understanding the NEC 2020 codes on hazardous locations, pricing niche instrumentation and following thoroughly the specs.
- Initiated a OneDrive cloud migration, created new estimating and project workflows. Introduced Beltran office to Microsoft's To Do List, to help better manage ourselves and projects.
- Initiated working alongside El Paso Electric's CLEAResult so that we may be able to offer incentives for lighting retrofit projects for our valued clients. Projects include Fred Hervey Water Treatment plant and multiple Lower Valley Water District sites. Required learning how to do photometrics using Visual 2020.
- Fixed Beltran engraver and scissor lift, both firmware related issues.
- Updated Beltran website so it stands up to par with their main competitors. www.beltranelp.com

Uebelkorp Industries LLC   El Paso, TX
Research and Development   **January 2023 – September 2023**

- Project planning by completing the technical processes necessary to identify stakeholder needs, systems requirements/architecture and project schedule.
- Worked on the development of perception, planning and control algorithms for a quadruped agent meant to be utilized for satellite inspection.
- Participated in a Chat GPT3 Hackathon where the prompt was to apply Chat GPT-3 in an application that can help in construction management.

NASA MIRO Center for Aerospace and Exploration Technology Research (cSETR)   El Paso, TX
Ph.D. Graduate Research Assistant   **January 2020 – January 2023**

- During my time in this position, I explored various algorithms and mathematical models for autonomous navigation. Algorithms explored have been PID's for control, EKF's for sensor fusion, path planning, computer vision for visual odometry and object recognition. Mathematical models explored have been for quadcopters and fixed winged aircraft.
- Setting up the foundation for simulation platform using ROS, ROS2 and Gazebo to simulate UAV's and sensors such as cameras, IMU's and lidar.
- Worked on the simulation and build of fixed wing unmanned aircraft.
- Participated in TORUS, *(Targeted Observation by Radars and UAS of Supercells)* which aimed at understanding the relationships between severe thunderstorms and tornado formation. My role was in UAS Operations where I would use Mission Planner to guide the UAS where the pilot in command saw fit to collect data.

Beltran Electrical Contractor   El Paso, TX
Electrical Estimator   **June 2018 – January 2019**

- Before my departure, I was awarded a small horizontal project. Some bus bays for the City of El Paso. The contract was for about $120,000.
- Responsible for the electrical takeoffs, using Bluebeam and McCormick, of large commercial bids ($1,000,000 +).
- Served as a liaison for any ongoing projects taking note of any addendums or request for quotes sent our way. Following up with our vendors making sure our needs are met.
- Took some EPCC courses to gain familiarity with the NEC, EPE Bluebook, electrical blueprints, and specs.

Doggett Freightliner of El Paso   El Paso, TX
Interned in sales   **June 2017 – June 2018**

- Used excel and fleet seek to create a rudimentary client resource manager to help salesmen keep track of their clients.
- With the help of Constant Contact created an email marketing campaign to follow up with clients. Made updates to the company website to work alongside marketing campaign and as well as adding alternative method for parts and service department to receive orders.
- Collaborated with a sales representative, I would consult with clients to address their needs. One of them being the City of El Paso.

El Paso Psychiatric Center   El Paso, TX
Psychiatric Nursing Assistant – Lead Tech   **June 2013 – June 2017**

- Responsible for 4-8 techs in unit which housed up to 30 forensic patients.
- Mediated dangerous situations concerning patient's well-being both health related and emotional.
- CPR Training

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2023 Algorithmic Trading – Using the Robinhood API I am selecting stocks based on desirable P/B, P/E and market cap to filter 5000 securities to 10-20 securities. Then setting up entry and exit strategies by using indicators such as fractals, Bollinger Bands and moving averages. My personal project is still ongoing. I am thinking of setting up something to better identify long term trends but for now I am sticking with good old fashioned fundamental analysis and patience. Some very expensive lessons learned.

2023 Built a website – Since COVID, I was interested in building and launching a website using HTML, CSS and JavaScript. I thought it would be useful to create a space to start to transfer and collect my notes. It was fun setting up a dedicated server for the website until it was not. Certain things are best left to other professionals. This website is an ongoing project as I am still collecting the resources for some projects and the time to build and document. For now, it's cool to have a space to document and organize my work. (www.adhocsteve.com)

2021 UAV Simulation Platform – Using Gazebo, ROS, ROS2, PX4 and Autopilot SITL intended to help students to research, design and develop whatever algorithms they are working on for a UAV. The environment was created using Blender and terrain data collected from QGIS. The intention was to use this platform to develop GPS denied navigation algorithms. Some programs that were implemented in the platform were for object avoidance and object recognition. This project is on standby, it would be great having the time to do this in Omniverse and do something with digital twins.

2020 Detection/Tracking/Identification of Unknown Aircraft via Radar and Yolo Computer Vision Algorithm – Implementation of slew to cue tracking where radars would track the path of incoming aircraft and send it coordinates to a PTZ camera so that it may point to the target and identify it.

2020 Detection/Tracking of Unknown Aircraft via Software Defined Radio - Managed a group of undergraduates to build a doppler direction finding system using some antennas, Kerberos Software Defined Radio, Raspberry Pin and RDF Mapper software. The goal was to have multiple ground stations placed across the city that would upload bearings to a server making it possible to triangulate the location of a UAV participant, then have that UAV transmission interrupted or hijacked using the networking tools of Kali Linux. We were able to successfully set up the ground stations and triangulate the location of a UAV participant. We faced obstacles in hijacking the UAV transmission because of DJI's encrypted communication link.

2019 Burst Disk (Senior Design) – Figured it was worth mentioning this humble project because out of 10 groups my group's burst disk design was the most practical designed disk, which also passed with excellence. Conceptualized, built, and tested by me which meant understanding the design parameters and being practical. To test the burst disk, I built a mini "pressure vessel" with some pipes, a compressor and a pressure gauge.

2019 Robot Arm (summer) – At this point I was growing an interest in electromechanical systems. With this project the goal was to build a robot arm that could 3D print and fit in a 10 x 10 x 10-centimeter space. We used the SCARA robot arm as a base design. For this project, I 3D printed the base, spacers and gears, which probably was not the best idea. The 3D printing could have been done cleaner by taking more time to explore the splicing and printing parameters. Regardless, it was here where I really felt I was introduced to the concept of firmware.