

# José A. Salcido

[salcido.jose@gmail.com](mailto:salcido.jose@gmail.com) | [jose-salcido.github.io](https://jose-salcido.github.io)

## **EDUCATION**

**M.S. PHYSICS | 2018-2018 | NEW MEXICO TECH**

COMPLETED COURSEWORK: PLASMA & HIGH-ENERGY ASTROPHYSICS

**B.S. ASTROPHYSICS | 2007 - 2010 | UCLA**

**A.A. LIBERAL ARTS | 2004 - 2007 | COLLEGE OF THE DESERT**

**A.S. COMPUTER NETWORKING & IT | 2001 – 2002 | HIGH-TECH INSTITUTE**

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## **SKILLS & ABILITIES**

**Programming Languages:** Python, C++, VBA

**Simulation & HPC Software:** AFSIM, SPySE, DSRC, GSB, PBS

**Other Software:** Tensorflow, Sci-Kit Learn, Keras, PyArrow, Scipy, Numpy, Pandas, Dask, Jupyter, Matplotlib, Astropy, Beautiful Soup, Plotly, Argparse, Git, JIRA, Bash, MPI, Matlab, LaTeX, Emacs, AIPS, CASA, IDL, IRAF

**Publications:** The Karl G. Jansky Very Large Array Sky Survey (VLASS). Science case, survey design and initial results. Publications of the Astronomical Society of the Pacific, Volume 132, Issue 1009

**Soft Skills:** Proven ability to lead an agile team both remotely and in person, demonstrating exceptional collaboration and communication skills. Proficient in leveraging communication and collaboration tools to ensure completion of projects with tight deadlines, and acquisition of additional follow-on contract and project funding.

## **CAREER HISTORY**

### **Space Systems Analyst**

### **Stellar Science**

**2018 – Present**

- Work autonomously supporting business development efforts including building relationships with current and prospective clients, representing the company at industry events, and contributing to Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) proposals.
- Perform technical phone and in-person interviews with prospective analysts and Artificial Intelligence, Machine Learning (AI/ML) expert candidates.
- Conduct Modeling, Simulation and Analysis (MS&A) studies supporting the Air Force Research Lab (AFRL) and the United States Space Force (USSF).
- Employ the latest ML library packages including Keras, Sci-kit Learn, PyTorch, and Tensorflow to train various types of models, including Neural Networks, Physics Informed Neural Networks and Decision Trees.
- Train AI agents using Reinforcement Learning (RL) packages including OpenAI Gymnasium and RLlib. Utilize agents within simulation environments for autonomous decision making Command and Control (C2) scenarios.
- Expertise with hyper-parameter model optimization by utilizing Design-of-Experiment (DOE) techniques making use of genetic algorithms as model objective functions to attain the best performing models for data predictions.

- Utilize High-Performance Computing (HPC) systems and develop custom data pipelines to automate model training, post-processing of Terabyte sized datasets, and construct data visualizations for quick analysis and model validity.
- Extensive experience practicing agile software development and collaborating with other software developers to write unit tests, perform Continuous Integration/Continuous Delivery (CI/CD), and in utilizing version control software such as Git.
- Experience with systems modeling including Model Based Systems Engineering (MBSE) techniques, SysML/UML, and related software including Cameo Systems Modeler, and Enterprise Architect.
- Developed project which employs Natural Language Processing (NLP) and SQLite to tokenize key words within published research papers, allowing for the ability to discover and pinpoint a paper for further analysis and review.

### **Scientific Data Analyst**

**Associated Universities, NRAO**

**2015 – 2018**

- Lead the Very Large Array Sky Survey (VLASS) imaging group composed of multiple analysts processing radio images for a several year-long sky survey in S-Band at the National Radio Astronomy Observatory (NRAO).
- Provided online helpdesk assistance to end-users of the Common Astronomical Software Application (CASA) software package. Attempted to replicate issues and collaborated with software developers for solutions.
- Worked with astronomers so ensure they understood pipelined data-reduced astronomical results and provided guidance on methods to improve image quality by performing additional data reduction and calibration techniques.
- Ensured the scientific data calibration pipeline performed as expected and performed Quality Assurance (QA) of calibrated data products on a daily basis.
- Developed software tutorials on Radio Frequency Interference (RFI) flagging techniques for radio astronomical data in preparation for use during the 15th Synthesis Imaging Workshop (June 2016).
- Performed weekly end-to-end stress tests on the Karl. G. Jansky Very Large Array (VLA) in New Mexico.

### **Science Operations Specialist**

**Associated Universities, NRAO**

**2012 – 2015**

- Operated instrumentation at the VLA, an array of 27 radio telescopes. Executed scientific radio astronomical observations in the 1-50 GHz frequency bands.
- Extensive knowledge of electronic circuit diagrams and software utilized to monitor the numerous electronic modules and components throughout the site.
- Ensured the safety of scientific equipment including radio antennas, data correlator, as well as the safety of the personnel visiting and conducting maintenance on site.
- Performed hardware and software troubleshooting during scientific observations in order to correct issues that may affect data. Generated maintenance reports of affected modules or hardware when issues were beyond my control.

### **Undergraduate Research**

**UCLA Department of Physics & Astronomy**

**Summer 2008**

- Conducted research of astronomical infrared data taken by the Spitzer Space Telescope in the 10 – 15  $\mu\text{m}$  region. Research involved attempting to determine size, composition, and temperature of a proto-planetary disk around a young Herbig Ae star.
- Utilized superposition, error analysis, and Monte-Carlo simulations to determine various characteristics of silicate emissions.

### **Intern**

**U.S. Department of Commerce, Census Bureau**

**Summer 2007**

- Developed a user-friendly database and associated User Interface (UI) utilizing Microsoft Visual Basic for Applications (VBA) and Microsoft Access.
- Database consolidated data from multiple existing databases and accepted new user inputs. UI aided users easily generate Word and PDF documents with queried data and track evaluations of department field representatives.