

# Jesus Caro

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## PROFESSIONAL SUMMARY

Motivated Data Analyst with extensive experience in project management, data analytics, business intelligence solutions, and ERP systems. Multiple impacts in the scientific field, by means of academic publications, and presentations at national conferences. Proven talent for aligning quantitative research objectives with established analytical methods, as well as communicating complex ideas in an easily digestible manner. Extensive experience working with R, Python, PHP, MS Access, SQL, Tableau, PowerBI, and Tidyverse. Strives to perpetually learn, and stay current with emerging technologies. Avid R and TidyVerse enthusiast. Frequent contributor to R and Data-Science forums.

## WORK EXPERIENCE

### Lead Data Analyst, **Stahmanns Incorporated.**

- Administration Jun 2018 – Current
  - Created dynamic reports in Excel and PowerBI with data from the SQL database of our ERP System to monitor purchase order flow, departmental spending, and work hour fluctuations.
  - Developed and maintained SQL databases to collect and store internal data, constructed and maintained interdepartmental dashboards and reports in PowerBI.
  - Created a production forecast tool in R that allows our sales team to see the quantity of each product we project to produce throughout the year, using current KPIs, historical, and production data.
  - Lead a company-wide initiative to re-design data capturing in our shelling and sorting plants, by developing a secure CRUD interface in HTML/JavaScript/PHP. This allows employees to enter data electronically and store it in a SQL server for automated analytic reporting, live trending, and visualization in PowerBI.
  - Carried out hypothesis testing and analytic studies using R, on multiple agricultural characteristics of our pecan orchards to identify habits that lead to more robust bearing, such as pruning habits, fertilizer applications, and seed germination in our pecan nurseries.
  - Assisted senior accountants with back-end data retrieval in our Dynamics GP ERP software.
  - Coordinated the deployment of weather station sensor suites across remote areas of our orchards, and developed API integration into various agricultural models derived from scientific papers that predict bud break, periods of high susceptibility to fungus and pests, and crop stress.
  - Lead an acquisition committee, and managed projects with the purpose of scoping, purchasing, and integrating enterprise software into our current infrastructure. Submitted requests for proposals to various system vendors, coordinated live demonstrations, projected yearly costs, and gathered salient system capabilities and information. Subsequently writing comprehensive analytical reports.
  - Served as the project manager for all changes to our enterprise systems, tracking updates, submitting change requests, and collaborating with business system consultants to optimize business processes.
  - Constructed dashboards for various business processes in Tableau, to increase the transparency and efficiency of our work-flow.

### Research Data Analyst, Washington State University

- Department of Physics Aug 2016 – May 2018
  - Wrote complex SQL queries to access data from databases, to join data tables, and archive resulting simulation data.
  - Constructed data visualization pipelines in R-Markdown using ggplot2 and tidyverse, to transform, summarize, and visualize resulting simulation data.
  - Coordinated the development, and testing of computational physics code in C / C++.
  - Performed large scale astrophysical fluid dynamic simulations on high performance computing clusters, editing and optimizing Python and Shell scripts via Terminal to organize data output.
  - Carried out statistical analysis on large data sets in Python, and created intuitive data visualization schemes.
  - Amended and debugged finite element method code to troubleshoot un-physical errors.
  - Worked as a team member in an international partnership with multiple research groups.
  - Resulting research was published in peer-reviewed journals (See: ‘Publications and Presentations’).

### Research Assistant, University of Texas, El Paso

- Department of Physics Aug 2015 – Aug 2016
  - Advanced existing open source computational physics code by incorporating modern mathematical models in Fortran.
  - Performed multiple large scale quantum chemistry calculations of fullerene molecules on Unix clusters.
  - Analyzed data output via statistical, and numerical methods in Python.
  - Resulting research was presented orally at national NSF conferences (See ‘Scholarly Contributions’).

## OTHER WORK EXPERIENCE

### The University of Texas at El Paso, El Paso, Texas, USA

- Teaching Assistant, Department of Physics (20 Hrs/Week) Aug 2013 – Aug 2015
  - Taught undergraduate Astronomy & Physics laboratories that reinforced the concepts conveyed in lecture.
  - Subjects include: Introductory Astronomy, Mechanics, Kinematics & Electromagnetism.

**Washington State University, Pullman, Washington, USA**

- Teaching Assistant, Department of Physics (20 Hrs/Week) Aug 2017 – May 2018
  - Taught introductory astronomy laboratory sections for non-science majors.
  - Subjects include: Retrograde motion, Phases of the moon, Constellations, Spectral Laws.

**EDUCATION**

**Washington State University, Pullman, Washington, USA**

- M.S. in Physics Aug 2016 – May 2018
  - Thesis: Effects of Neutron Star Equations of State on Black Hole Neutron Star Mergers
  - Advisor: Prof. Matthew Duez
  - Focus: General Relativity, Computational Physics, Numerical Methods, Data Analysis.
  - Cumulative GPA: 3.46 / 4.00

**University of Texas, El Paso, El Paso, Texas, USA**

- B.S. in Physics Aug 2013 – May 2016
  - Regular Dean's list Recipient.
  - Cumulative GPA: 3.41 / 4.00

**PUBLICATIONS & PRESENTATIONS**

**ACADEMIC PUBLICATIONS**

1. *Systematic effects from black hole-neutron star waveform model uncertainties on the neutron star equation of state*  
Kabir Chakravarti, Anuradha Gupta, Sukanta Bose, Matthew D. Duez, [Jesus Caro](#), Wyatt Brege, Francois Foucart, Shaon Ghosh, Koutarou Kyutoku  
Physical Review D, Sep 2018.
2. *Black hole-neutron star mergers using a survey of finite-temperature equations of state*  
Wyatt Brege, Matthew D. Duez, Francois Foucart, M. Brett Deaton, [Jesus Caro](#), Daniel A. Hemberger, Lawrence E. Kidder  
Physical Review D, Sep 2018.
3. *Gravitational wave forms from SpEC simulations : neutron star-neutron star and low-mass black hole-neutron star binaries*  
Francois Foucart, Matthew D. Duez, Tanja Hinderer, [Jesus Caro](#), Andrew R. Williamson  
Physical Review D, Jan 2019.

**CONFERENCES**

1. [J. Caro](#), Implementing SOGGA & SOGGA11 Into NRLMOL. *NSF Partnership for Research Education In Materials UTEP-UCSB Conference.*, Santa Barbara, California, USA, Nov 2015.
2. [J. Caro](#), Energetics And Spin Multiplicities In FeO 4 Isomers Utilizing A Strongly Constrained And Appropriately Normed Meta-GGA Functional. *NSF Partnership in Research Education In Materials Summer Conference 2016*, San Marcos, Texas, USA, Jul 2016.

**AWARDS & SCHOLARSHIPS**

- RADS Fellow, Washington State University, 2016 – 2017  
Fully funded one year fellowship, that allows graduate students to pursue research during their first year.
- NASA Space Grant Fellowship, Washington State University NASA Consortium, Feb 2017  
A grant to conduct research in the astrophysical field during the summer of 2017.

**LANGUAGES**

- English: Native language.
- Spanish: Fluent (speaking, reading, writing).

**SKILLS**

R, Python, C++, Numpy, Linux, Shell/Bash Scripting, Excel, PowerBI, Tableau, SQL, Dynamics GP, Data Analytics, MS Access, TidyVerse

## REFERENCES

- **Dawn Sutton**  
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- **Dr. Matthew Duez**  
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- **Dr. Tunna Baruah**  
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