

# Daniel Ruiz-Perez

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## HIGHER EDUCATION

- Dec 2020 **Ph.D. In Computer Science.** (ETS GRE Quantitative: 168/170).  
**Florida International University** (BioRG lab), Miami, USA. G.P.A.: 4/4 (Top 1%).  
Modeling multi-omic heterogeneous interactions under a Dynamic Bayesian Network framework from temporally misaligned longitudinal data. Data Mining application on the microbiome of Bacterial Vaginosis, and study of dimensionality reduction algorithms like PLS-DA or PCA.
- Dec 2019 **M.S. in Computer Science.**  
**Florida International University**, Miami, USA. G.P.A.: 4/4 (Top 1%).
- Jun 2016 **M.S. in Software Engineering.**  
**University of A Coruña**, Spain. G.P.A.: 3.52/4 (Top 5%). MS's thesis to be defended in 2020.
- Jun 2015 **B.S. in Computer Science.**  
**University of A Coruña**, Spain. G.P.A.: 3.41/4 (Top 5%).

## WORK EXPERIENCE

- 2019-2019 **Data Science Summer Intern.** **Assurant** Advanced Data Analytics Team), Miami, USA.  
Spearheaded the architecture design and implementation of the end-to-end migration of all on-premise systems to Azure Cloud Ecosystem (Event Hubs, Databricks, Delta Tables, ...).
- 2016–2020 **Graduate Assistant.** **Florida International University**, Miami, USA.  
Teaching Assistant (2016-2017, 2018-2020) and Research Assistant (2017-2018).  
Taught Graduate Theory of Computation, Operating Systems Principles, Intro to Data Mining, Intro to Microcomputers, and Academic Success Initiative Ambassador for four undergraduate courses.
- 2015–2016 **Software Engineer.** **Aldaba Information Technology and Services**, A Coruña, Spain.  
Analysis, design, implementation, and maintenance of an expert system in Java IBM ODM, a radioactive alarm system in C#, and a web application with .NET in a SCRUM team.
- 2014–2015 **Undergraduate Research Assistant.** **University of A Coruña**, Spain  
Use of machine learning to analyze genomic data and development of a bioinformatic platform accessible at [chromevol.fiu.edu](http://chromevol.fiu.edu). In collaboration with the CHROMEOL group at FIU.
- 2012–2014 **Judo Instructor.** **Cambre Ocio SL**, A Coruña, Spain.

## AWARDS RECEIVED

- **Dissertation Year Fellowship**, Florida International University, USA, 2019.
- **Best Graduate Student in Teaching Award**, Florida International University, USA, 2019.
- **Charles Perry Graduate Scholarship**, Florida International University, USA, 2019.
- **Research Grant**, Golden Key International Honor Society, 2019.
- **Conference Travel Fellowships from:**
  - Conference on Neural Information Processing Systems (NeurIPS), 2019.
  - NeurIPS LatinX in Artificial Intelligence (LXAI) Research Workshop, 2019.
  - ACM-IMS Interdisciplinary Summit on the Foundations of Data Science, 2019.
  - Michigan Institute for Data Science Consortium and Annual Symposium, 2019.
  - International Conference on Computational Advances in Bio and medical Sciences (ICCABS), 2018
  - FIU Graduate and Professional Student Committee: 2017 and 2018.
  - FIU School of Computing and Information Sciences: 2017 and 2018.
- **Golden Key full scholarship and best project award**, International Scholar Laureate Program, 2018.
- **Biomedical Research Initiative Award**, Florida International University, USA, 2017.
- **Graduate Assistantship**, Florida International University, USA, 2016-Present.
- **Undergraduate research scholarship**, Ministry of Science and Education, Spain, 2015.
- **Research learning fellowship**, University of A Coruña, Spain, 2015.
- **Graduated from high school with the highest honors.** GPA: 3.98, 2011.
- **Exceptional athlete recognition**, Cambre City Council, 2007-2010.

## PERSONAL SKILLS

Languages	<b>English:</b> Proficient. <b>Spanish, Galician:</b> Native. <b>Portuguese, French:</b> Elementary.
Job Skills	<b>Experience:</b> Bioinformatics, Machine Learning, Data Mining, Data Analysis, Data Science, Time Series Analysis, Algorithms, Software Engineering, Back-end Web Development, Android, Azure. <b>Programming Languages:</b> Python, R, MATLAB, Java, C, C#, JavaScript. <b>Databases:</b> MySQL, PostgreSQL, MongoDB. <b>Frameworks:</b> Django, .NET, MEAN Stack. <b>Prior experience:</b> Information Retrieval, Game Theory, Robotics, Computer Graphics, Videogame Development, Expert Systems, Computer Vision, AWS, SCRUM, Cloud.
Member of	IEEE, ACM, YPIE, AXA, SMBE, Golden Key, and Microbiology Society.
Freelancer	Developed 3 Android apps in the wellness and health area.
Other	Certified Judo instructor and 2nd Dan Judo black belt. Several times regional champion.

## RESEARCH WORK

### Journal publications:

1. Lugo-Martinez<sup>†</sup>, **Ruiz-Perez<sup>†</sup>**, Narasimhan, Bar-Joseph (2019). Dynamic interaction network inference from longitudinal microbiome data. *BMC Microbiome*, 7:54, doi: 10.1186/s40168-019-0660-3. <sup>†</sup>**Equal contribution.**
2. **Ruiz-Perez**, Guan, Madhivanan, Mathee, Narasimhan. So you think you can PLS-DA? *To appear in BMC Bioinformatics*, 2019.
3. Sazal, **Ruiz-Perez**, Cickovski, Narasimhan. Inferring Relationships in Microbiomes from Signed Bayesian Networks. *To appear in BMC Bioinformatics*, 2019.

### Posters:

1. **Ruiz-Perez**, Sazal, Park, Cickovski, Lee, Cho, Hwang, Narasimhan (2019). Role of gut microbiota and their temporal interactions in kidney transplant recipients. *LXAI at NeurIPS*, Vancouver, Canada.
2. Sazal, **Ruiz-Perez**, Valdes, Cickovski, Stebliankin, Mehta, Mathee, Narasimhan (2019). Signed Causal Bayesian Networks for Microbiomes. *LXAI at NeurIPS*, Vancouver, Canada.
3. Lugo-Martinez, **Ruiz-Perez**, Narasimhan, Bar-Joseph (2019). Dynamic interaction network inference from longitudinal microbiome data. *RECOMB* at Washington, DC, USA.
4. Coudray, **Ruiz-Perez**, Colbert, Krupp, Kumari, Mathee, Narasimhan (2019). P371 Effect of metronidazole treatment on recurrent and persistent bacterial vaginosis: a pilot study. *STI BMJ*;95:A187
5. Madhivanan, Coudray, **Ruiz-Perez**, et al. (2019). P372 Bacterial vaginosis and high-risk human papillomavirus coinfection among African American women in the United States. *STI BMJ*;95:A188.
6. Madhivanan, Coudray, **Ruiz-Perez**, Colbert, Krupp, Kumar, Narasimhan, Mathee (2019). P373 Co-occurrence of bacterial vaginosis and *Trichomonas vaginalis* among young African American women. *STI BMJ*;95:A188.
7. Coudray, **Ruiz-Perez**, et al. (2019) Effect of metronidazole on microbiomes associated with asymptomatic bacterial vaginosis. *Microbiology Society Annual Conference* at Birmingham, UK. DOI:10.1099/acmi.ac2019.po0531
8. Lugo-Martinez, **Ruiz-Perez**, Narasimhan, Bar-Joseph (2019). Dynamic interaction network inference from longitudinal microbiome data. *ACM-BCB* at Niagara Falls, NY, USA.
9. Colbert, Coudray, **Ruiz-Perez**, et al. (2018). To Treat or Not to Treat: Bacterial Vaginosis and its Relationship to Human Papillomavirus. *Microbiology Society Annual Conference* at Birmingham, UK.
10. Suarez-Ulloa, Aguiar-Pulido, **Ruiz-Perez**, Narasimhan, Eirin-Lopez (2016). Network-based analysis of chromatin-associated gene expression dynamics in response to environmental stress. *ISMB* at Orlando, USA.

### Conference Proceedings:

1. **Ruiz-Perez**, Lugo-Martinez, Bourguignon, Mathee, Lerner, Bar-Joseph, Narasimhan (2020). Dynamic Bayesian networks for integrating multi-omics time-series microbiome data. *Submitted to RECOMB*. DOI: 10.1101/835124
2. Lugo-Martinez, **Ruiz-Perez**, Narasimhan, Bar-Joseph (2019). Dynamic interaction network inference from longitudinal microbiome data. *SMBE* at Manchester, UK. ID: SMBE-OR-195
3. Coudray, **Ruiz-Perez**, Colbert, Krupp, Kumari, Narasimhan, et al. (2019) Effect of metronidazole on microbiomes associated with asymptomatic bacterial vaginosis. *Access Microbiology*, 1(1A). DOI: 10.1099/acmi.ac2019.po0531
4. **Ruiz-Perez**, Guan, Madhivanan, Mathee, Narasimhan (2018). So you think you can PLS-DA?. (Oral Presentation) *ICCABS* at Las Vegas, NV, USA. DOI: 10.1109/ICCABS.2018.8542038.
5. Sazal, **Ruiz-Perez**, Cickovski, Narasimhan (2018). Inferring Relationships in Microbiomes from Signed Bayesian Networks. (Oral Presentation) *ICCABS*, Las Vegas, NV, USA. DOI: 10.1109/ICCABS.2018.8542086.
6. **Ruiz-Perez**, Colbert, Coudray, Mathee, et al. (2018). Vaginal microbial profile of women with asymptomatic bacterial vaginosis in US. (Oral Presentation) *Microbiology Society Annual Conference* at Birmingham, UK.

### Other Conference presentations:

*MIDAS Annual Symposium* (2019) at Ann Arbor, USA. *Young Researchers Abroad Conference* (2018) at A Coruña, Spain. *Annual Biomedical and Comparative Immunology Symposium* (2018) at Miami, USA. *IWBIO* (2016) at Granada, Spain. *International Conference on Biomedical Research* (2014) at A Coruña, Spain