

# José Vinícius de Miranda Cardoso

keywords: time series, optimization, machine learning, software development, quantitative research

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## Education

*PhD Student in Electronic and Computer Engineering* *Fall 2019 – Current*  
**The Hong Kong University of Science and Technology**, Hong Kong  
*Topic:* Time-varying graphical models for applied finance  
*GPA:* 4.3/4.0

*Visiting Student – Electrical Engineering and Computer Science* *Fall 2014 – Spring 2015*  
**The Catholic University of America**, USA  
**University of Maryland at College Park**, USA  
Brazil Scientific Mobility Program, Fully funded scholarship recipient

*B.Eng. in Electrical Engineering* *2019*  
**Federal University of Campina Grande**, Brazil

## Professional Experience

*Machine Learning Mentor* *May 2019 – Aug 2019*  
**Udacity**, Remote  
Guided students from fundamental concepts of linear algebra to state-of-the-art convolutional neural nets.

*Scientific Software Engineering Intern* *Mar 2017 – Feb 2018*  
**NASA Ames Research Center**, Silicon Valley, CA, USA  
Kepler/K2 Guest Observer Office  
Developed open source Python code to assist scientists get the most out of NASA Kepler/K2 time series data.

*Google Summer of Code Student* *Summer 2016*  
**The AstroPy Project**  
Project title: Point spread function photometry for fitting overlapping stars simultaneously  
Developed open source Python code to fit Gaussian mixture models to stellar images.

*Undergraduate Guest Researcher* *Summer 2015*  
**National Institute of Standards and Technology**, USA  
Center for Nanoscale Science and Technology  
Nanofabrication Research Group  
Developed MATLAB code to automatically localize nanoemitters in optical microscopy images.

## Volunteering Experience

*Deputy AstroPy GSoC Coordinator* *Fall 2019 – Current*  
Deputy coordinator for the AstroPy project in the Google Summer of Code program  
Organizing the AstroPy efforts towards participating in the Google Summer of Code.

*Google Summer of Code Organization Administrator* *Summer 2019 – Current*  
Admin for the OpenAstronomy organization during GSoC 2019  
Managing the OpenAstronomy efforts towards participating in the Google Summer of Code.

*Google Summer of Code Mentor for the AstroPy Project* *Summer 2018*  
Project title: Develop astropy tutorials on how to fit data  
Mentored an astronomy PhD student during her GSoC project with AstroPy.

# Project Proposals

## NASA Transiting Exoplanet Survey Satellite Proposal

2019

Uniform Light Curves Across the Entire Sky from TESS FFIs with ELEANOR

Principal Investigators: Dr. Benjamin Montet (University of Chicago) and Dr. Jacob Bean (University of Chicago)

Co-Investigators: Adina Feinstein (University of Chicago), Dr. Daniel Foreman-Mackey (Flatiron), Dr. Jessie Christiansen (IPAC/Caltech), Dr. Rodrigo Luger (U. of Washington), Dr. Daniel Scolnic (U. of Chicago), and Dr. Christina Hedges (NASA Ames), Nicholas Saunders (University of Hawaii), José Vinícius de Miranda Cardoso (Universidade Federal de Campina Grande)

## NASA Transiting Exoplanet Survey Satellite Proposal

2018

Performing The Most Comprehensive Exoplanet Survey Of The Southern Sky With TESS Full Frame Images

Principal Investigator: Dr. Benjamin Montet (University of Chicago)

Co-Investigators: Dr. Daniel Foreman-Mackey (Flatiron), Dr. Jessie Christiansen (IPAC/Caltech), Dr. Rodrigo Luger (U. of Washington), Dr. Daniel Scolnic (U. of Chicago), and Dr. Christina Hedges (NASA Ames)

Undergraduate students: Nicholas Saunders (U. of Washington) and José Vinícius de Miranda Cardoso (Universidade Federal de Campina Grande)

# Selected Publications

1. Kumar, S., Ying, J., **Cardoso, J. V. M.**, Palomar, D. P. A unified framework for structured graph learning via spectral constraints. *Journal of Machine Learning Research (JMLR)*, Jan. 2020.
2. Kumar, S., Ying, J., **Cardoso, J. V. M.**, Palomar, D. P. Structured graph learning via Laplacian spectral constraints. *Advances in Neural Information Processing Systems (NeurIPS)*, Dec. 2019.
3. Davanco, M., I., Liu, J., Sapienza, L., Zhang, C. Z., **Cardoso, J. V. M.**, Verma, V., Mirin, R., Nam, S. W, Srinivasan, K. Heterogeneous integration for on-chip quantum photonic circuits with single quantum dot devices. *Nature Communications*, 2017.
4. **Cardoso, J. V. M.**, *et. al.* An approximate exponentiated Weibull envelope-phase distribution. *IEEE International Symposium on Antennas and Propagation/USNC-URSI National Radio Science Meeting*, Farjado, Puerto Rico, 2016. **Travel grant recipient**.

For a complete list of my publications, please refer to <https://mirca.github.io/publications>.

# Awards

1. Selected, with full travel funding, to the workshop *Preparing for TESS*, New York City, USA, 2018
2. Selected to the workshop Python in Astronomy, Leiden, The Netherlands, 2017
3. Selected, with full travel funding, to the São Paulo School of Advanced Science on Nanophotonics, São Paulo, Brazil, 2016
4. Young Author Recognition Award, International Telecommunication Union, ITU Kaleidoscope 2015
5. Young Author Recognition Award, International Telecommunication Union, ITU Kaleidoscope 2014

# Competencies

**Coding:** Python, R, C++, Java, git/GitHub, Unix shell, unit tests, continuous integration/development

**Courses:** Convex Optimization, Stochastic Processes, Information Theory, Topological and Geometric Data Analysis

**Languages:** Native Portuguese, Fluent English

**R packages maintainer:** spectralGraphTopology (learning graphs from data), riskParityPortfolio (fast and scalable design of risk parity portfolios)

**Python packages maintainer:** riskparity.py (designing risk parity portfolios)