ANDREW GARCIA

Ph.D. student with a passion to solve real-world problems through first principles & statistical approaches

@ garcia.gtr@gmail.com 786-332-9418 Gainesville, FL Google Scholar github.com/andrewrgarcia
in /in/andrewrygarcia

EXPERIENCE

Graduate Assistant

University of Florida

08/2017 – Ongoing Gainesville, FL

- Made a kinetic Monte Carlo (kMC) Python script for a crystal layer dissolution process to optimize crystal size through a cycling process
- Tutored college students on a Python programming based course (COT3502) as a teaching assistant for 1 semester

Associate Engineer

Xerox

07/2015–07/2017 Webster, NY

- Provided estimates of spread (standard deviation) through factorial and simple Monte Carlo (sMC) methods for a system level design which was implemented at the production scale.

Research Assistant

University of Florida

12/2013–06/2015 Gainesville, FL

- Co-invented a technology highly applicable to the $1.68 billion dollar market of nerve repair and regeneration.

PROJECTS

Processing-size correlations for the synthesis of magnetic alginate microspheres

University of Florida

2017

- A model for estimating the size of crosslinked microspheres based on processing conditions was developed from power law fits.
- Standard error of 3% was reported for the effect of shear rate with respect to size.
- Article published in *Colloids Surf., A*

Prediction of a macroscopic property measuring technique through first principles microscopic dynamics

Xerox

One week

- Created an algorithm which was able to extrapolate with high confidence ($R^2 > 0.98$) the outputs of a confidential characterization technique from a single-point stochastic fit.
- Algorithm was based on the acceptance-rejection sampling principle of Monte Carlo.

MOST PROUD OF

Graduate School Preeminence Award (2017)
Awarded to strongest Ph.D. applicants at the beginning of the Ph.D. program

Wand Calculator (2014)
Published a stand-alone computer freeware made with Visual Studio. Program makes bench chemistry calculations.

Crypto reader integration to back-testing algorithm
Adapted Yves Hilpisch's technical analysis script from *Python for Finance (2014)* to work with cryptocurrencies.

SKILLS

Stochastic Calculus | Statistics | Six Sigma Green Belt

- **Python**
- **Git**
- **LaTeX**
- **Visual Studio**
- **MATLAB**
- **GNU Octave**
- **JavaScript**
- **R**

EDUCATION

Ph.D. in Chemical Engineering

University of Florida

2017 – Ongoing

Thesis title: Metal Organic Frameworks for Single-File Diffusion Studies

M.Sc. in Chemical Engineering

University of Florida

2012 – 2015

B.Sc. in Chemistry

University of Miami

2007 – 2011