

Andrew Garcia

Gainesville, FL

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🌐 www.github.com/andrewrgarcia/CV/.../andrewg

Education

University of Florida <i>Ph.D. Chemical Engineering</i>	Gainesville, FL <i>2017–present</i>
University of Florida <i>M.S. Chemical Engineering</i>	Gainesville, FL
University of Miami <i>B.S. Chemistry</i>	Coral Gables, FL

Skills

Programming: Python, Git, \LaTeX , MATLAB, JavaScript, Visual Basic

Software: Minitab, ImageJ, Office Suites, VESTA, Diamond, LIMS

Experience

University of Florida <i>Graduate Assistant</i>	Gainesville <i>08/2017–present</i>
<ul style="list-style-type: none">Research Assistant - Topic: Transport measurements of gas diffusion through metal organic framework (MOF) channels and synthesis thereof.Teaching assistant for the Computer Model Formulation (COT3502) and Chemical Kinetics and Reactor Design (ECH4504) chemical engineering courses for the Fall 2017–Spring 2018 semester.	
Xerox <i>Associate Engineer, NY</i>	Webster <i>07/2015–07/2017</i>
<ul style="list-style-type: none">Optimized toners to meet standards demanded by client(s) by conducting/analyzing several factorial experiments (DOEs)Contributed to Xerox's intellectual property portfolio by passing invention submissions focused on toner quality improvement.	
University of Florida <i>Research Assistant</i>	Gainesville <i>12/2013–06/2015</i>
<ul style="list-style-type: none">Adapted a process which was used to support the submission of a \$45,000 commercialization proposal in June 2014.Materialized primary goals of research project, making helpful contributions to the passing of a larger NIH R01 funded (about \$180,000 for the year 2015) project.Co-invented a technology highly applicable to the \$1.68 billion dollar market of nerve repair and regeneration.	

Data Science / Programming Exp. and Projects

2018–present Ph.D. Research (University of Florida):

- Development of a kinetic Monte Carlo (kMC) algorithm for a MOF crystallization process (Python) and an analytical expression thereof.
- Development of chemical equilibrium reaction networks to model concentration of chemical species with respect to system changes based on a system of non-linear equations solver (Python)

Spring 2018 TA (University of Florida):

Instructed and assisted students with computer programming development (Python) and numerical analysis topics

2015–2017 Engineer (Xerox):

- 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.
- Created a Monte Carlo simulation algorithm through Python which predicted the results of a [confidential, non-disclosed] characterization method

2014-2015 M.S. Research (University of Florida):

- o Proposed a model for crosslinked microsphere size from power-law fits through Minitab and published an **article** thereof based on fundamental theory
- o Prepared all publication plots using Python and submitted an **entry** to the 2015 Scipy John Hunter plotting contest

Fall 2014 M.S. Student (University of Florida):

Learned Python and worked on **3** projects which integrated Python to solve problems on statistical mechanics:

- (1) Calculations of a polymer's hydrodynamic radius from random walk theory, making use of probability density functions.
- (2) Simulation of a 2-dimensional Ising Model.
- (3) Calculations of Internal Energy and Pressure from Monte Carlo simulations of a 2-D Lennard-Jones Model.

Publications

- 1: AR Garcia, C Lacko, C Snyder, AC Bohorquez, CE Schmidt, C Rinaldi. (2017) "Processing-size correlations in the preparation of magnetic alginate microspheres through emulsification and ionic crosslinking" *Colloids Surf., A*. 529:119-127
- 2: AR Garcia (2015) "Synthesis of dissolvable magnetic microspheres for tissue scaffold applications (MS Thesis)" *University of Florida*
- 3: AR Garcia, I Rahn, S Johnson, R Patel, J Guo, J Orbulescu, M Micic, JD Whyte, P Blackwelder, RM Leblanc.(2013) "Human insulin fibril-assisted synthesis of fluorescent gold nanoclusters in alkaline media under physiological temperature" *Colloids Surf., B*. 105:167-172
- 4: W Liu, S Johnson, M Micic, J Orbulescu, JD Whyte, AR Garcia, RM Leblanc.(2012) "Study of the aggregation of human insulin langmuir monolayer" *Langmuir*. 28(7):3369-3377

Patents and Inventions

2018: PATENT: C Rinaldi, CE Schmidt, C Lacko, Z Khaing, AR Garcia "Magnetically templated tissue engineering scaffolds and methods of making and using the magnetically templated tissue engineering scaffolds" **US Patent US20180133372A1**, PCT filed May 11, 2016

2016-2017: XEROX TRADE SECRETS: (6 total) Primary author of **5**

Certificates

Technical.....

09/2016: Design for Six Sigma IDOV Green Belt, Xerox

2015-2018: Lean Six Sigma DMAIC Green Belt, 2221-4545, IIE

07/2013: Process Engineering Certificate, University of Florida

First Aid.....

2015-2017: Healthcare Provider, NY15657, American Heart Association

2015-2017: Heartsaver®First Aid, NY15657, American Heart Association