Thomas Kolb, PhD

Data Scientist

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Summary: Python data scientist with strong project management skills. Experienced in cleaning, creating pipelines for and visualizing data. Quick to acquire the necessary skills to complete projects.

EDUCATION

University of North Carolina at Chapel Hill – Chapel Hill, NC *Aug. 2015 – Aug. 2020*
PhD, Physical Chemistry

Union College – Schenectady, NY *Sept. 2011 – June 2015*
B.S. Mathematics and Chemistry (Double Major) *GPA: 3.75, magna cum laude*

Relevant Coursework: Differential Equations, Linear Algebra, Statistical Mechanics, Physics

TECHNICAL SKILLS AND CERTIFICATIONS

Python (6 years): PANDAS, Matplotlib, NumPy, Seaborn, SciPy, Scikit-Learn, Jupyter, Pillow, Bokeh
Other: Bash (6 years), SQLite* (1 year), Git (3 year), HTML/CSS (1 year), LaTeX (7 years)

*Certified in this skill

PROJECT EXPERIENCE

The active Brazil nut effect in binary mixtures of active particles *In review*

Upper and lower critical phase behavior in active matter *In review*

Active binary mixtures of fast and slow hard spheres, *Soft Matter* *Dec. 2019*

- Wrote data pipelines to efficiently distil meaningful results from **big data** for both single and multi-processor systems (locally and on supercomputer clusters)
- **Communicated** technical concepts (e.g. distribution and autocorrelation functions) to a broad audience using **visual analysis**
- Developed strong **project management** skills, creating and completing projects

HONORS

National Science Foundation Graduate Research Fellowship *Sept. 2017 – Aug. 2020*

- Wrote a technical grant proposal and won a competitively awarded national grant providing three years research funding

Publication selected as the back cover of *Soft Matter* *Dec. 2019*
Best Poster Award, Triangle Soft Matter Workshop (NC State University) *May 2018*
Materials Research Science and Engineering Center Fellowship *Aug. 2016 – Aug.2017*
First Place, CHANL Scientific Art Competition (UNC Chapel Hill) *April 2016*

ADDITIONAL ACTIVITIES – PRESENTATIONS

Oral Presentations:

Binary Mixtures of Hard Sphere Active Brownian Particles *March, 2019*
American Physical Society National Meeting, Boston, MA

Phase Separation in Binary Mixtures of Active Brownian Particles *March, 2018*
American Physical Society National Meeting, Los Angeles, CA

Heterogeneous Active Matter Systems *Nov. 2017*
American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN

Heterogeneous Active Matter *March, 2017*
American Physical Society National Meeting, New Orleans, LA

Poster Presentations:
Motility-Induced Phase Separation in Active/Active Mixtures *May 2018*
Triangle Soft Matter Workshop, NC State University, NC

Binary Active Mixtures Exhibit Dynamic Steady-State Behaviors *Oct. 2017*
Triangle Student Research Competition, Research Triangle Park, NC

Tunability of Active Matter Mixtures *May 2017*
Triangle Soft Matter Workshop, UNC, NC

Active Matter Mixtures: Heterogeneity Breeds Utility *May 2016*
Triangle Soft Matter Workshop, Duke University, NC

ADDITIONAL ACTIVITIES – LEADERSHIP POSITIONS

Materials Research Society (UNC Chapter), APS Liaison *Aug. 2017 – Aug. 2018*
♦ Fostered inter-departmental connections to acquire funding and guest lectures
Men's Varsity Crew, Captain *Sept. 2012 – June 2015*
♦ Led an all-academic honors team to consecutive championship races
Chemistry Club, President/Member *Sept. 2011 – June 2015*
♦ Implemented mentoring events to foster professional development for undergraduates

ADDITIONAL ACTIVITIES – VOLUNTEERING

Scientist Pen Pal, Letters to a Pre-Scientist *Sept. 2018 – May 2019*