David Qiu

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objective

Looking to apply my abilities as a scholar in Chemistry and programming to other fields.

education

University of Illinois at Urbana-Champaign **Exp. May 2020**

James Scholar, B.S. in Specialized Chemistry – 3.94 GPA as of Jan. 2020

Relevant Coursework

- Phys. Chem. I + II, Inorg. & Org. Chem. I + II, Instrumental Char., Quant. Analysis.
- Core Math & Phys. curricula: Lin. Alg., Diff. Eq., Calc. I-III, Univ. Mech., E+M, Q. Mech.

duPont Manual High School **May 2018**

Valedictorian, National Merit Finalist. SAT 1570/1600, ACT 35/36.

- **Apr. 2016**: Placed 2nd in Undergraduate Neuroscience Convention at the Univ. of Louisville.

research + employment

Medical Scribe, OSF Heart of Mary Medical Center ED **May. 2019 – Jun. 2020**

- Documented medical charts for ED physicians using the Epic EMR system. Learned to enjoy learning in a stressful, hectic environment while building relationships with successful ED physicians

Researcher and TA, University of Illinois at U-C **Nov. 2018 – ***

- **TA for Phys. Chem. I, ***
- **Hirata Group, 2019-2020**: Performing electronic structure calculations of molecular dimers via a C++ implementation of the Monte Carlo MP2 theory developed in the Hirata group.
- **Jain Group, 2018-2019**: Characterized the superionic properties of twin-domain Cu_2S NCs to engineer solid-state electrolytes and further development of next-generation batteries.

Intern, Amprius Corporation **May – Jul. 2019**

- Wrote Python scripts for cleaning and processing several GB of numerical data produced daily by the company's several automated battery cyclers. CSV parser is posted on github.

ability

- Practical, direct experience with numerical/computational analysis in conjunction with statistical modelling through a diverse portfolio ranging from C/C++ implementations of theoretical calculations of molecules in respective quantum states, to Python and R scripts written to optimize lithium-ion battery cycling performance, to LaTeX typesetting of publication-ready articles.
- Able to understand and solve problems involving complex, abstract concepts such as those that form the basis of our interpretation and calculation of optical and chemical phenomena, including MO theory, perturbation theory, and electronic structure theory.
- Beyond capable of self-learning any field. Entirely self-taught in programming and usage of UNIX-like distributions since age 16, with relevant experience to demonstrate ability nearly equivalent to that of a major in CS. Self-taught Calc. III, Diff. Eq., Univ. Mech, E+M, and Q. Mech. prior to taking university proficiency exams.

involvement and honors

- Academic Chair of American Chemical Society, UIUC Chapter. *****
- Oliver J. Bell Merit Scholar, Homer J. and Edith M. Birch Scholar **Aug. 2019**
- 2019 John E. Gieseking Scholar (for undergraduate research) **May 2019**
- Named ACS High Honors (Top 50 in the U.S. Chemistry Olympiad). **May 2018**

Note: * denotes present or expected in the near future.