David Qiu

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objective

To build fast, reliable, and scalable fullstack software developed with the latest technologies and SaaS platforms.

education

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

B.S. in Chemistry with Highest Distinction; James Scholar, Dean's List, Cum Laude (GPA: 3.92)

Relevant Coursework

- Phys. Chem. I–II; Inorg. Chem.; Org. Chem. I–II; Instrumental Char.; Quant. Anal.
- Lin. Alg.; Diff. Eq.; Calc. I–III; Univ. C. Mech., E+M, Q. Mech.; Num. Anal.

duPont Manual High School **May 2018**

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

research + employment

Techstack and full CV viewable at https://qiu.dev/techstack.

Fullstack Developer, Helium Development LLC **Feb. 2021 – ***

- Learned Typescript, React, and Rails in 2 weeks beforehand. Began delivering value on day 1.
- Utilized Scrum methodology to deliver iterative improvements on the monolithic codebase of Helium's flagship product, *Customer Fields*, a Shopify app that allows merchants to collect, store, and analyze customer data.
  - Advocated and enforced best practices to improve code quality and maintainability; Implemented a suite of unit tests, refactored bloated React components, introduced the latest development tooling, and collaborated with UI designer and project manager to deliver fantastic user experiences.
- Exclusively entrusted with the development of the admin interface to our latest app in a joint collaboration with Snapbar, *Holar*, a SaaS product that enables event coordinators to collect, store, and distribute portrait photos of employees and customers.
- Developed a CI pipeline script integrated with the Netlify build process, which uploads compiled GraphQL serverless functions to the Google cloud platform on each branch push.

Researcher and TA, University of Illinois at U-C **Nov. 2018 – May 2021**

- **Hirata Group, 2019–2021**: Contributed to development of a novel stochastic technique in the evaluation of higher-order perturbation energies for very large molecular systems, termed *Monte Carlo perturbation theory*. Parsed, processed, and interpreted large numerical datasets via numpy and pandas. Run on the Blue Waters supercomputer at the NCSA.
- **TA for Phys. Chem. I, Spr. 2020**: Taught an introductory course in quantum mechanics to 60+ juniors and seniors under Professor Hirata.
- **Jain Group, 2018–2019**: Performed electronic impedance spectroscopy to characterize the superionic properties of twin-domain Cu_2S nanocrystals, a potential solid-state electrolyte for next-generation lithium-ion batteries.

involvement and honors

- 2020 ACS Undergraduate Award in Physical Chemistry, Worth H. Rodebush Award **May 2020**
- Academic Chair of American Chemical Society, UIUC Chapter. **May 2019 – May 2020**
- 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**

selected publications

- Qiu, David. *Investigations into Molecular Dimers via Many-body Monte Carlo Methods.* Undergraduate thesis. 2020.
- Doran, Alexander; Qiu, David; Hirata, So. *Monte Carlo MP2-F12 for noncovalent interactions: The C60 dimer.* To be published. 2021.

Note: * denotes present or expected in the near future.
Last updated 13 June 2021.