Patryk Kozlowski

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Education

California Institute of Technology, Pasadena, CA — June 2024 (expected)
Unweighted GPA : 3.96
BS in Chemistry

Technical Skills

Programming Languages : Python with *Numpy* (intermediate) and *PySCF* (beginner), LaTeX(Advanced), Mathematica (beginner), and C (beginner)
High Performance Computing : QM with Jaguar (beginner) and periodics with VASP (intermediate)

Relevant Experience

Research Fellow — November 2022 - Present
California Institute of Technology
- Work on personal theoretical chemistry project in the Chan Group
- Apart from grading responsibilities, held weekly recitations and office hours

Teaching Assistant — October 2020 - December 2020
California Institute of Technology
- Worked 9 hours/week as a TA for the introductory quantum mechanics course for chemists
- Implement Full CI (https://github.com/pkozlows/fci)

John Stauffer Summer Undergraduate Research Fellow — June 2020 - September 2020
California Institute of Technology
- Conducted simulations using quantum chemistry methods in the Chan Group
- Compute surface chemistry properties using coupled-cluster theory
- Application to the development of heterogenous catalysts for sustainable chemical production

John Stauffer Summer Undergraduate Research Fellow — June 2019 - September 2019
California Institute of Technology
- Conducted physical inorganic chemistry research in the Hadt Lab
- Developed a computational model for spin-phonon coupling in Co(III) coordination complexes
- Application to transition metal complexes used in photocatalysis and quantum informatics

Scholarships and Awards

- Goldwater Scholar in Mathematics, Science, and Engineering — 2021
- Polish National Alliance Scholarship — 2020, 2021
- Perpall Speaking Competition Semifinalist, California Institute of Technology — 2020
- John Kopczynski Scholarship, Polish University Club of Los Angeles — 2019, 2020
- Richard Gorecki Scholarship, Polish American Congress — 2020

Publications and Presentations

- Kozlowski, P. T. 2021. "Elucidating Catalysis with the "Gold Standard" of Quantum Chemistry". Caltech Undergraduate Research Journal, 21 (1). https://curj.caltech.edu/2021/06/29/elucidating-catalysis-with-the-gold-standard-of-quantum-chemistry/.
- Kozlowski, P. 2020. "Elucidating Catalysis with the "Gold Standard" of Quantum Chemistry". Oral session presented virtually at : Annual Caltech Fall SURF Seminar Day, October 17. https://youtu.be/pcNnGM0bYRw.
- Kozlowski, P. 2019. "Spin-Phonon Coupling in Transition Metal Complexes." Oral session presented at : Annual Caltech Fall SURF Seminar Day, October 17, Pasadena, CA.
- Higdon, N. J., A. T. Barth, P.T. Kozlowski, and R. G. Hadt. 2020. "Spin-Phonon Coupling and Dynamic Zero-Field Splitting Contributions to Spin Conversion Processes in Iron(II) Complexes." Journal of Chemical Physics, 152 (20), 204306. https://doi.org/10.1063/5.0006361.

Other Experience

Student-Faculty Comittee Member October 2020 - January 2021
California Institute of Technology
- — Published an online survey to get feedback from students on the chemistry major
- — Discussed proposed curriculum changes with faculty

Social Director October 2019 - December 2020
Caltech Chemistry Club, Pasadena, CA
- — Organized monthly professional, community outreach, and social events
- — Recruited a distinguished chemical researcher for the club's annual speaker event

Volunteer June 2019 - July 2020
California Institute of Technology
- — Held weekly tutoring sessions for the Caltech Y's RISE Program
- — Prepared underprivileged high school students for their STEM classes and the SAT

Athlete January 2014 - December 2020
- — Started for Caltech's NCAA intercollegiate tennis team (ranked in the Top 25)

Languages

Polish : Fluent