Patryk Kozlowski

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Education

California Institute of Technology, Pasadena, CA — June 2024 (expected)
Unweighted GPA : 3.96
BS ; 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 periodic QM with VASP (intermediate)

Relevant Experience

Research Fellow — November 2022 - Present
California Institute of Technology
- Work on personal theoretical chemistry project advised by Prof. Garnet Chan
- Implement Full CI (https://github.com/pkozlows/fci)

Teaching Assistant — October 2020 - December 2020
California Institute of Technology
- Worked 9 hours/week as a TA for chemistry introductory QM course
- Apart from grading responsibilities, held weekly recitations and office hours

John Stauffer Summer Undergraduate Research Fellow — June 2020 - September 2020
California Institute of Technology
- Used quantum chemistry methods to run simulations with Prof. Garnet Chan
- Computed surface energies of platinum using coupled-cluster theory
- Application to the development of heterogenous catalysts for sustainable chemical production
- *Publications and Presentations*
  - Kozlowski, P. T. 2021. "Elucidating Catalysis with the "Gold Standard" of Quantum Chemistry". Caltech Undergraduate Research Journal, 21 (1). .
  - 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.

John Stauffer Summer Undergraduate Research Fellow — June 2019 - September 2019
California Institute of Technology
- Conducted physical inorganic chemistry research with Prof. Ryan Hadt
- Developed a computational model for spin-phonon coupling in Co(III) coordination complexes
- Application to transition metal complexes used in photocatalysis and quantum informatics
- *Publications and Presentations*
  - Kozlowski, P. 2019. "Spin-Phonon Coupling in Transition Metal Complexes." Oral session presented at Annual Caltech Fall SURF Seminar Day, October 19, 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.

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

Other Experience

Student-Faculty Conference 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
California Institute of Technology
- Started for Caltech's NCAA intercollegiate tennis team (ranked in the Top 25)

Languages

Polish : Fluent