KRISTOPHER S. BROWN

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OBJECTIVE

I work daily with distributed high-performance computing, applied mathematics, database engineering, and data analytics infrastructure. My PhD addresses systemic challenges with data sharing, transparency of methodologies, and automation in computational science.

EXPERIENCE

CTO, Database Engineer Spring 2018 - Present
PicoCycle (stealth mode startup)

- Designed tools for automation of distributed computing and heterogeneous data integration to accelerate corporate research in the computational sciences.
- Developed tools for scientists modeling complicated phenomena to generate relational databases from a natural declaration of scientific facts and to naturally query and publicly communicate their knowledge base.

Graduate Research Assistant Winter 2016 - Present
Stanford University, Nørskov Group

- Built models for chemical systems that adapt recent advances in ML (e.g. graph-convolutional and message-passing networks) to interface with chemistry data
- Applied graph-theoretic techniques to give high-level structure to simulation data in order to model complex phenomena at electrochemical interfaces

Visiting Scholar Fall 2015 - Summer 2016
École Polytechnique Fédérale de Lausanne, Luterbacher Group

- Constructed multi-scale models to interpret the impact of synthesis conditions on catalyst material properties

Research and Development Engineering Intern Summer 2014
Bayer CropScience

- As the facility's sole engineer, collaborated with biologists to design and construct novel bioreactor systems.
- Designed, assembled, and implemented dynamic fluid systems for managing a sterile bioreactor network.

EDUCATION

PhD in Chemical Engineering 2020 (expected)
Stanford University

Bachelor of Engineering in Chemical Engineering 2015
Bachelor of Science in Chemistry 2014
Dartmouth College, *Magna cum laude*

Honors

Applied Category Theory: Bridging Theory & Practice at NIST (invited guest) 2018
CS230 Deep Learning: 1st Prize Poster Award (Stanford University) 2018
National Defense Science and Engineering Graduate (NDSEG) Fellowship 2017 - Present
American Chemical Society National Scholar 2012 - 2014

SKILLS AND INTERESTS

Programming Languages	Python (6 yr), SQL (3 yr), Haskell (3 yr), Java (1 yr), MATLAB (6 yr)
Spoken Languages	Spanish, German, French (intermediate level)
Extracurricular Activities	Tau Beta Pi, Dartmouth Undergraduate Journal of Science (Writer), Dartmouth Quizbowl (Captain), Concert piano and music composition