Daniel Hofmeister

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🎓 Education

University of Wisconsin - Madison   May 2020
B.S. Computer Science and Biochemistry

Relevant Courses Artificial Intelligence, Matrix Methods in Machine Learning, Probability Statistics, Linear Algebra, Operating Systems, Database Management Systems, Bioinformatics

⚙ Skills

Languages Java, C/C++, Python, JavaScript, HTML/CSS, SQL
Technologies/Frameworks Git, Linux, Docker, Maven, React.js, Node.js

🕑 Experience

Undergraduate Researcher   February 2018 – May 2020
Holden Lab, University of Wisconsin Biochemistry Department

> Designed and completed multiple independent research projects investigating unique carbohydrates on membranes of pathogenic bacteria
> Collaborated and problem solved with other undergraduate researchers
> Used X-ray Crystallography to determine protein structures
> Performed site directed mutagenesis to modify protein structures
> Created 3D molecular models using Python, C++ programs (Crystallographic Object Oriented Toolkit, PyMOl)
> Refined models using specialized software for protein crystallography
> Analyzed data using statistics software (GraphPad Prism, Excel)
> Submitted multiple 3D models of proteins to Worldwide Protein Data Bank
> First author of peer reviewed publication
> Adhered to Good Manufacturing Practice during independent research

Undergraduate Researcher   January 2016 - June 2016
Karasov Lab, University of Wisconsin Wildlife and Ecology Department

> Assisted postdoc researcher on study of digestive physiology and enzymes in avian species
> Prepared reagents, mixed buffers, and PCR materials for research team
> Managed laboratory supplies and maintained inventory
> Maintained documentation and updated SOPs
> Completed training in the use of animals in laboratory research

⚗ Projects

Python Image Deblurring App

> Utilized scikit-image processing package and machine learning to remove blurriness from an image
> Based on the mathematical concept of total variation denoising
> Displayed the image as a histogram representation to evaluate effectiveness of the algorithm

Java Tic-Tac-Toe Game

> Created a command line Tic-Tac-Toe game which can be played against a computer AI
> Implemented the Minimax Algorithm to determine the best computer moves

✎ Publications

Hofmeister, D. L., Thoden, J. B., Holden, H. M. (2019). Investigation of a sugar N-formyltransferase from the plant pathogen *Pantoea ananatis*. Protein Science, 28(4), 707–716.