

Patrick J. Lestrangle

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Skills

Programming	Python, Fortran77/90, C++, LaTeX, Shell Scripting, SQL, Perl, Javascript
Tools	Tensorflow, Scikit-learn, Flask, Docker, Elasticsearch, Tesseract
Data Science	Generalized Linear Models, Deep Learning, Natural Language Processing, Computer Vision, Optical Character Recognition, Web Scraping

Experience

Boeing

Data Scientist

Seattle WA

Aug. 2018 - present

- Trained an object detection model (Faster R-CNN) implemented using tensorflow to identify 9 different classes of symbols in engineering drawings. Created synthetic training examples to overcome class imbalances and improve model generalization.
- Applied classic image processing techniques and open-source optical character recognition models to interpret text in engineering drawings.
- Deployed these models in a continuously running docker container that receives messages from and send results to a kafka server.

Insight Data Science

Fellow

Seattle WA

Jan. 2018 - Jul. 2018

- Built *Gefilter Fish*, a Chrome extension to cluster Amazon reviews into topics and reduce redundancy by greater than 15% compared to a current feature on the website.
- Designed an interface to display these topics when viewing a product on Amazon's website. It also returns summaries of the reviews focused on that topic.
- Performed sentiment analysis using a database of 1.7M reviews to determine the perception of specific aspects of a product.
- Used Python, Javascript, SQL, web scraping, and natural language processing techniques such as lemmatization, tf-idf, and non-negative matrix factorization.

University of Washington

Graduate/Postdoctoral Researcher

Seattle WA

Sep. 2012 - Dec. 2017

- Developed an algorithm to describe how molecules interact with X-ray lasers. This technique was up to 1000 times faster than previous approaches and is now available in the commercial software package Gaussian16 (Fortran77).
- Implemented nonlinear optimization algorithms to converge quantum mechanical wave functions in ~ 10 times fewer steps (C++).
- Collaborated with a team of 10 experimental researchers to model how muscular proteins bind and release small molecules and how this process can be tracked with X-ray lasers.
- 12 peer-reviewed publications, 5 oral presentations, 4 conference posters.

Education

University of Washington

Ph.D. in Chemistry

Seattle, WA

Sep. 2012 - June 2017

York College of Pennsylvania

B.S. in Chemistry

York, PA

Sep. 2008 - May 2012