

# Julia Nguyen, PhD

## Experience

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Metis - Remote  
Data Scientist

Sept. 2020 to Dec. 2020

Metis is a 12-week ACCET-accredited data science training program that focuses on projects solving real-life problems using statistics, programming, machine learning, natural language processing, database management, and visualization. **See project section.**

University of Washington - Seattle, WA  
Graduate Teaching Assistant/Lecturer (2014 - 2020)

Sept. 2014 to Aug. 2020

- Managed and taught chemistry classes and labs in organic chemistry, analytical chemistry and general chemistry.
- Graded assignments and held weekly discussion sessions or tutoring sessions to go over key concepts with students.

Graduate Research Assistant (2015 - 2019)

- Discovered, developed and optimized two metal catalyzed reactions to publish two first author papers.
- Mentored several undergraduate and graduate students, two of whom became second authors on my papers.
- Broadened the scope of the lab's research program by developing projects in protein modification and origin of life research.

DOW Agrosiences - Indianapolis, IN  
Organic Chemistry Intern

May 2013 to Aug. 2013

- Synthesized and characterized a new class of derivatives of a natural product (~10 steps each) for application testing and patent protection.

## Projects

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### Detecting Misinformation in News Media

- Leveraging BeautifulSoup, scrapped new articles and ratings from AdFontesMedia to develop a linear regression classification model that can predict whether an article contains misinformation or not.
- Used NLP techniques (topic modeling/Latent Dirichlet Allocation) to find the topics on which fake news clusters. Explored corpus via ScatterText identifying distinguishing terms.
- Created an app that takes in a URL and predicts the likelihood that the article contains misinformation. The app also provides major topic clusters of current fake news.

### Predicting Homicide Clearance

- Built and optimized a logistic regression model to predict whether a homicide will be cleared based on factors such as victim race, age, and sex, and the location at which the murder took place.
- Visualized the role variables such as age, sex, race and location had on clearance rates using Tableau.

### Measuring Urban Sprawl Using Satellite Imagery

- Using transfer learning, developed a convolution neural network to classify images as urban or non-urban.
- Applied to CNN model to satellite images to measure the growth of urban areas over time for various cities.

## Contact

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✉ julia12358@gmail.com

☎ (774) 262-9010

📍 Seattle, WA 98105

🌐 /in/julia-nguyen-73649955/

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## Skills

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### LANGUAGES/TOOLS

Python

Pandas

Numpy

SQL

Git

Scikit-learn

R

### VISUALIZATION

Matplotlib

Seaborn

Tableau

### MACHINE LEARNING

Regression Modeling

Supervised Learning/Classification

Unsupervised Learning/Clustering

Natural Language Processing

Neural Networks

Deep Learning

## Education

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University of Washington

PhD Chemistry 2019

Dissertation: Cross-Coupling of Alkenyl

Gold Complexes with Alkyl

Electrophiles and Nickel Catalyzed

Hydroarylation of Alkenes

Williams College

BA Economics and Chemistry 2014