# Mitchell Murphy

mitchmurphy.io

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**Tampa, FL**

GitHub
Kaggle
LinkedIn

## Skills

**Advanced**: Python, pandas, visualization, SQL, regression, classification, NLP (NLTK, spaCy, and gensim), deep learning (TensorFlow and Keras), regular expressions, Django
**Proficient**: supervised/unsupervised learning, clustering algorithms, web/mobile development, Photoshop
**Expert**: Written & verbal communication

## Recent Projects

***Deep Learning for Quantum Mechanics*** | *SlideDeck*
Extension to previous work on applying machine learning to quantum mechanics, this time using the QM7 dataset and a convolutional neural network to predict atomization energy.

***Presidential Topic Modeling***
Applied semi-supervised learning approaches to extract common themes across all State of the Union addresses (1790-2018), and explored if this information had explanatory power in classifying text to political party.

***Machine Learning Approach to Quantum Mechanics*** | *SlideDeck*
Built a regression model (gradient boosting) to predict the atomization energy of molecules from initial coordinates of atoms contained within a molecule.

## Experience

FIRE SUPPRESSION DESIGN SERVICES — *Tampa, FL*
***Developer*** — **August 2018 –present**

- Created data-centric web application(automatic notification system) using Django and notification system using Django/Python and cron jobs.

**CONTINUOUS LEARNING THROUGH ADVERSITY**
***Research Assistant*** — **June 2011 –January 2018**

- Suffered catastrophic injuries summer before senior year (June 4, 2011)
- Returned to school 6 months later, however was advised by doctors to halt my academic studies to facilitate recovery
- Gradually resumed studies at 3 different universities, acquired over 20 certifications
- Doctors approved resuming full academic studies in January 2017

CENTER FOR PROTEOMICS & BIOINFORMATICS — *Cleveland, OH*
***Research Assistant*** — **May 2008 – June 2011**

- Built a thorough protein-protein interactions (PPI) database from disparate public sources
- Collaborated with a team of molecular and computer scientists
- Utilized graph theory techniques to predict protein-protein interactions

## Education

CASE WESTERN RESERVE UNIVERSITY
***Computer Science & Mathematics, contrentation: Computational Biology*** — **January 2018**

- Algorithms, databases, bioinformatics, artificial intelligence, statistics

THINKFUL — **April 2019**
***Data Science Program***

- Completed intensive data science program with a focus on Python, mathematical tool-sets, statistical analysis, and big data techniques including machine learning.
- Learned industry best practices and standards by collaborating several hours every week with a senior data scientist.