

# Christopher Bui

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## Education

**Johns Hopkins University**  
Bioinformatics, M.S. (Graduation: 2022)

**University of California, San Diego**  
Biophysics, B.S.; Entrepreneurship Minor (Graduation: 2018)

## Experience

### Data Scientist

*SCAN Health Plan*

Long Beach, CA  
Nov. 2023 – Current

- Developed efficient SQL queries on Microsoft Azure platform to analyze patient EHR and claims data
- Led the research and development of multiple CART and Deep Neural Network classifiers using PyTorch to identify patients at high risk for medication non-adherence
- Created classifier model and assessed performance in determining member's eligibility for healthcare plans

### Data Scientist

*Bio-Rad Laboratories*

Irvine, CA  
Sep. 2023 – Oct. 2023

- Developed efficient SQL queries in Snowflake environment to optimize datasets for PowerBI dashboards
- Analyzed profit margins of company's entire product portfolio to identify key performance indicators
- Built and presented professional dashboards using Power Bi and associated DAX language

### Data Scientist

*The Johns Hopkins University Applied Physics Laboratory*

Laurel, MD  
Aug. 2022 – Jul. 2023

- Built data preprocessing pipeline in Python for environmental sensor data of hospital operating rooms
- Deployed linear regression and clustering models to help predict potentially hazardous hospital conditions
- Utilized High Performance Computing (HPC) clusters through SLURM on Linux to run Sars-Cov-2 protein-protein docking simulations
- Used *NextStrain* open-source tool to compare Sars-Cov-2 strains
- Analyzed federal inventory of Covid-19 personal protective equipment using PySpark
- Wrote and executed standard operating procedure (SOP) for field testing hardware that predict real-time core body temperatures of military working dogs

### Machine Learning Engineer Intern

*3M*

Silver Spring, MD  
Jun. 2020 – Aug. 2020

- Utilized the PySpark library on AWS to process parquet text files containing medical records data
- Designed machine learning models to create text embeddings for ICD-10 medical codes to improve 3M's NLP software capabilities
- Followed a Scrum framework and managed tasks using Jira

## Projects

### Cancer Tissue Detection

- Developed a PyTorch CNN model and applied transfer learning to classify tissue images as either cancerous or not
- Trained on 200,000 images using CUDA tensor cores; Performance reached 86% overall accuracy

### Semantic Image Segmentation of Cellular Nuclei

- Created a U-Net architecture neural network using Tensorflow and trained model on AWS to segment nuclei locations
- Preprocessed 700 microscope images of nuclei of varying cell types using Scikit-learn and OpenCV

### Lymphoma Microarray Analysis

- Applied Principal Component Analysis on high dimensional lymphoma cancer microarray dataset
- Utilized k-means and hierarchical clustering techniques to classify lymphoma strains and group similar functioning genes

### Wikipedia Question & Answer

- Created an unsupervised NLP model using TF-IDF and cosine similarity that outputs relevant text in response to an input question
- Utilized NLTK and Gensim to preprocess JSON text data of Wikipedia articles

## Skills

**Technologies:** Python, R, Java, PyTorch, Tensorflow, Keras, Scikit-Learn, Pandas, Numpy, Jupyter Notebook, PySpark, HPC, SLURM

**Data Management:** PostgreSQL, Git, AWS, Spark, Tableau, PowerBI, Microsoft Azure

**Soft:** Verbal & Written Communication, Detail-Oriented, Self-Motivated, Organized, Empathy