

# SHAMIKH HOSSAIN

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## EDUCATION

### Duke University

2016 - 2020

B.S. in Computer Science, B.S. in Statistics, Minor in Economics

**Relevant Coursework:** Algorithms, Mathematical Statistics, Regression Analysis, Data Structures, Probability, Discrete Mathematics, Computer Architecture, Microeconomics, Multivariable Calculus, Linear Algebra, Computational Biology

## EXPERIENCE

### Valassis Digital

May 2018

*Software Engineering Intern*

*Austin, TX*

### Duke Office of Information Technology: Innovation Co-Lab

Jan 2018 - Present

*Developer, Technical Consultant*

*Durham, NC*

- Develop university APIs, websites, and developer tools and hold weekly technical advising office hours for the student community.
- Contributing to development of Co-Lab homepage and project discovery platform in Ruby on Rails: <https://colab.duke.edu/>

### Duke Energy Data Analytics Lab

May 2017 - Present

*Research Associate, Data+ Summer Fellow*

*Durham, NC*

- Developed techniques for predicting village-level household electrification rates from satellite imagery using supervised learning
- Published ground-truth dataset, built and deployed data pipeline to streamline feature extraction and dimensionality reduction
- Applied gradient boosting classification to predict electrification with .80 AUC using class-imbalanced, high-dimensional dataset

### Carin Lab Group at Duke University

Nov 2017 - Present

*Research Assistant*

*Durham, NC*

- Applying semi-supervised deep learning architectures to Duke Hospital's surgical datasets, advised by Dr. Lawrence Carin
- Collaborated with graduate researchers in using autoencoders in NLP problems with limited labeled data using TensorFlow

### Duke Office of Information Technology: Biology

Aug 2016 - May 2017

*IT Consultant*

*Durham, NC*

- Worked alongside full-time IT analysts to provide tailored hardware/software support for professors, staff, students
- Wrote documentation/guides, trained new consultants, implemented department-wide software integrations/security updates

## SELECT PROJECTS

**SFPD Dispatch Analysis:** Investigation of San Francisco emergency dispatch data to formulate solutions for improving response times. Top entry to Capital One MindSumo challenge. (Python, matplotlib, HTML/CSS/JS)

**HitChecker:** Review tool for crowdsourced image annotation Drastically reduced time needed for dataset review/worker payment and ensured integrity of ground-truth data in research project. (Python, Tkinter, Amazon Mechanical Turk API)

**Biology IT Inventory:** Web platform & RESTful API for keeping track of helpdesk inventory equipment and users (Django)

**Politiquette:** Chrome extension displaying on-hover interest group ratings for US senators on inequality issues (JS, Flask)

## SKILLS

**Software:** Python, Java (experienced); C, Ruby (familiar); Git

**Data:** NumPy, SciPy, pandas, matplotlib, Matlab, scikit-learn, TensorFlow, R, Jupyter Notebook, Tableau, Excel

**Web:** HTML/CSS, JavaScript, Ruby on Rails, Django, Flask, Node, Bootstrap

**Coursework:** *Coursera:* Machine Learning, *DeepLearning.ai:* Neural Networks & Deep Learning

## OTHER

**Activities:** Organized Duke Machine Learning Day, a workshop/research symposium event, as Director of Logistics

**Interests:** API development, automation, machine learning, urban economics, high-dimensional data analysis

**Recognition:** IB Diploma Recipient, National AP Scholar (2x), U.S. Presidential Scholar Candidate, Burger King Scholar, Dean's List, Microsoft Coding Competition- 3rd (tie), Duke Research Computing Symposium Poster Competition- 1st

**Events:** Invited to Capital One Software Engineering Summit (May 2018), AQR (Applied Quantitative Research) Capital Management Early Engagement Program (May 2018), 2018 State Energy Conference of North Carolina (April 2018)