

# 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

*Incoming 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 medical datasets, advised by Dr. Lawrence Carin.
- Collaborating 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:** Website using analysis/visualization of SFPD emergency dispatch data to formulate solutions for improving emergency response times. Top entry to Capital One MindSumo challenge. (Python, matplotlib, HTML/CSS/JS)

**HitChecker:** Review tool for crowdsourced image annotation data through Amazon Mechanical Turk allowing for efficient image task evaluation and worker payment. Drastically reduced time needed for dataset review and ensured integrity of ground-truth data in summer research program. (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)

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

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

**General:** Git, Linux/Windows/Mac OS, Google Cloud Platform, Heroku

**Coursework:** *Coursera:* Machine Learning, *DeepLearning.ai:* Neural Networks & Deep Learning, *Lynda:* Django, Deploying TensorFlow Applications, *Enthought Training:* SciPy & NumPy, *Duke Health:* Biomedical & Vulnerable Subject Research Certification, *Energy Data Analytics Lab:* Data Science Seminar

## OTHER

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

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

**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)