

Shamikh Hossain

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EDUCATION

Duke University – Durham, NC

Aug 2016 – May 2020

- B.S. Computer Science, B.S. Economics
- Relevant Coursework: Data Structures & Algorithms, Computer Architecture, Microeconomics, Linear Algebra, Multivariable Calculus, Energy Data Analytics Lab, Economic Principles

North Hills Preparatory – Irving, TX

Aug 2012 – May 2016

- International Baccalaureate Diploma, National AP Scholar

EXPERIENCE

Duke Energy Data Analytics Lab – Durham, NC

May 2017 – Present

Research Fellow

- Build open-source research software and analyze datasets relevant to energy access, remote sensing, and geospatial data
- Researching applications of image processing and supervised learning for modeling electrification rates from aerial imagery to enhance grid-planning efforts in remote/developing regions by forming georeferenced electricity access visualizations
- Developed an end-to-end machine learning pipeline using HTML/CSS/JS, Python, scikit-learn, scikit-image, Matlab and ArcGIS to streamline image data acquisition through crowdsourcing, data evaluation, and conversion to applicable formats for analysis
- Worked in a team to implement data pipeline to build open-source satellite imagery dataset for electricity access classification in NSF-funded research under Dr. Kyle Bradbury of the Energy Initiative through the Duke DataPlus summer program

Carin Lab Group at Duke University – Durham, NC

Nov 2017 – Present

Research Assistant

- Researching applications of deep supervised learning under Dr. Lawrence Carin and Dr. Ricardo Henao
- Analyzing echocardiogram video data using Python and TensorFlow to enhance medical workflows in Duke Hospital

Duke Office of Information Technology – Durham, NC

Aug 2016 – May 2017

IT Consultant

- Worked in a team using the ServiceNow CRM platform to provide tailored hardware and software support for research computing in Biology, Chemistry, Evolutionary Anthropology laboratories, assisting staff, professors, and students
- Wrote internal and external documentation and troubleshooting guides, trained new consultants, researched technical issues, and implemented department-wide software integrations and security updates alongside full-time IT analysts

PROJECTS

- **HitChecker** – Software tool written in Python and the Tkinter framework using the Amazon Mechanical Turk API to allow a researcher to efficiently evaluate crowdsourced image annotation data and simultaneously pay the relevant Turk workers; reduced the time needed for dataset review and worker compensation by half and ensured integrity of Summer 2017 dataset
- **Biology IT Inventory** – Developed Web [platform](#) and accompanying RESTful API with Python/Django, HTML/CSS/JS/Bootstrap and PostgreSQL to assist IT helpdesk workers in tracking their loaner equipment inventory and current users
- **Politiquette** – Developed backend for HackDuke 2017 [project](#), a browser extension displaying on-hover interest group ratings for selected issues for all US Senator mentions on a webpage, built in Python/Flask and HTML/CSS/JavaScript
- **Duke Conservation Technology** - Implementing lightweight-tagging and computer vision to build a cost-efficient drone UAV [system](#) to monitor endangered species using the Robot Operating System (ROS) library
- **Tutorial Series** – Personal YouTube [channel](#) of software and design-related tutorial videos, accumulated 185,000+ views
- **DAMUN Website** – Built new [website](#) for Model UN conference, led to outreach that resulted in grant from the UN Foundation

SKILLS

- **Software:** Python (experienced), Java (experienced), Ruby (familiar), C (familiar); **Data:** NumPy, SciPy, pandas, matplotlib, Excel, Matlab, scikit-learn, TensorFlow, R, Jupyter; **Web:** HTML/CSS, JavaScript, Ruby on Rails, Django, Flask, Node, Bootstrap, jQuery
- **General:** Git, Linux, Google Cloud Platform, Heroku
- Independent Coursework: Lynda- Django, Enthought- NumPy, Duke Health-Biomedical/Vulnerable Subject Research Certification

OTHER

Activities

- Duke Machine Learning (DML) Executive Board Member, Student Organization Finance (SOFC) Auditor

Interests

- Full-stack web development, software engineering, data science, machine learning, economic history, energy access, urban and development economics, electricity access, high-dimensional data analysis, math, scientific computing, statistics

Recognition

- University Dean's List, Burger King Scholar, 3rd Place (tie), Microsoft Coding Competition at Duke