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, Multivariable Calculus, Linear Algebra, Energy Data Analytics Lab, Economic Principles

EXPERIENCE

Duke Office of Information Technology: Innovation Co-Lab – Durham, NC *Incoming Jan 2018*
Technical Consultant in Web Development

- Role related to university API and website development, technical advising for student community in weekly office-hours

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 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, evaluation, and conversion to 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 Duke DataPlus program

Carin Lab Group at Duke University – Durham, NC *Nov 2017 – Present*
Research Assistant

- Researching applications of deep supervised learning methods under Dr. Lawrence Carin and Dr. Ricardo Henao
- Working with patient data from Duke Hospital to enhance and automate menial medical report reviews with autoencoding and convolution-based natural language processing techniques using Python, TensorFlow, and Keras

Duke Office of Information Technology: Biology – 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, and 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 –** Review tool written in Python and Tkinter 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 more than half, ensured integrity of aerial imagery 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 resulting in grant from UN Foundation

SKILLS

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

OTHER

- **Activities:** Duke Machine Learning (DML) Director of Logistics; Student Organization Finance (SOFC) Auditor
- **Interests:** Full-stack web development, software engineering, data science, machine learning, economic history, energy access, urban/development economics, electricity access, high-dimensional data analysis, math, scientific computing
- **Recognition:** IB Diploma, National AP Scholar, Dean's List, 3rd Place (tie), Microsoft Coding Competition at Duke