Preya Shabrina

Looking For Summer (2021) Internship

Interested in Data Science Intern, Applied Machine Learning/Machine Learning Engineering Intern, and SDE Intern Positions

Education

Exp May 2023 **Ph.D. Computer Science**, *North Carolina State University*, Raleigh, NC.

2017 **B.Sc. Computer Science and Engineering - CGPA (3.90/4.00)**, *Bangladesh University of Engineering and Technology (BUET)*, Dhaka, Bangladesh.

Experience

May 2019–Present **Graduate Research Assistant**, *North Carolina State University*, Raleigh, NC.
- Led research projects
- Collaborated with professor and fellow graduate students in research projects
- Mentored undergraduate research students

Aug 2018–May 2019 **Graduate Teaching Assistant**, *North Carolina State University (NCSU)*, Raleigh, NC.
- Assisted CSC 236 (Computer Organization and Assembly Language) students by answering questions and providing hints to write assembly-language programs

Mar 2017–Jul 2018 **Software Engineer**, *Infosapex Limited, Expo Group*, Dhaka, Bangladesh.
- Developed web-based and iOS apps
- Mentored junior software engineers

Feb 2016–Feb 2017 **Undergraduate Research Student**, *Bangladesh University of Engineering and Technology*, Dhaka, Bangladesh.
- Collaborated with Professor and fellow students in a research project

Skills and Tools

Data Science: Machine Learning (Linear and Non-Linear Models, Reinforcement Learning), Supervised, Unsupervised and Semi-Supervised Learning, Missing Data Handling, Feature Selection etc.

Programming: Python (pandas, NumPy, SciPy, Scikit-learn, Tensorflow, keras), R, C, C++, Java, Swift, Objective C, & SQL.

Data Tools: Weka, RStudio, Jupyter Notebook

Visualization: R (ggplot2), Python (GraphViz, matplotlib, skimage, pillow), LaTeX.

Others: HTML, CSS, JS, JQuery, Django, Firebase, Postman, Charles Web Debugging Proxy, FileZilla, Redis, PostgreSQL, Git

Research Projects

Jan 2020–Present **Data Driven Support for Novice Programmers in a Block-based Programming Environment (iSnap)**.
- Analyzed novice programmers' code log data to understand the impact of data-driven hints/feedback on their programming behaviour [Publication].

Oct 2019–Jan 2020 **Prediction of Students' Wheel Spinning Behaviour in an Educational Math Game**.
- Engineered features and gave effort to generate a prediction model to predict students' wheel spinning behaviour [a state of high effort, low learning outcome] using their sequential gameplay data in Spatial Temporal Math (ST Math), an educational math game.

Raleigh – NC
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preya-shabrina

May 2019–Oct 2019 **Class format analysis from ST Math students' sequential gameplay data (github)** .
- Identified class formats used in gameplay sessions and modeled relationship between gameplay session features and class performance using students' sequential gameplay data [Publication].

May 2019–Oct 2019 **Data-informed Curriculum Sequences for a Curriculum-Integrated Game**.
- Identified the optimal sequence of objectives in ST Math for better learning outcomes [Publication].

Jan 2019–May 2019 **Prediction of students' future performance in ST Math**.
- Predicted performance on the next level and number of levels a student can complete in subsequent gameplay using prior gameplay data [Publication].

Course Projects

Spring 2020 **Implemented a Model to Detect Changes in Satellite Imagery using U-Net and an Unsupervised Change Detection Algorithm (Referenced Paper) (github)**.

Fall 2019 **Engineered Features and Developed a Machine Learning Model to Predict Students' Enjoyment in ST Math (github)**.

Fall 2019 **Selected Features to Train an Intelligent Logic Tutor, Deep Thought, using Reinforcement Learning (github)**.

Fall 2019 **Missing Value Imputation in Clinical Temporal data (github)**.
- Improvised the 3D-MICE algorithm to impute missing values in temporal clinical data by feeding a temporal view of the data to the MICE component of 3D-MICE

Spring 2019 **Email Authorship Identification**.
- Employed Multiple Machine Learning Algorithms to Identify Emails from Trusted Authors

Fall 2018 **Wootz (github)**.
- Developed a compiler to generate Tensorflow Code from high level neural network specification

Industry Projects

2018 **BuzzListing**.
- Designed and implemented an augmented reality based iOS app, BuzzListing, to find out nearby properties for sale or lease

2017 **Tuberculosis Patients' Report Management System**, *National Tuberculosis Control Program, People's Republic of Bangladesh*.
- Implemented a tuberculosis patients' treatment data management system and developed an embedded data analyzing tool providing insight of overall condition of tuberculosis spread around the country

2017 **Digiflow(Web portfolio)**.
- Designed and implemented a task notification system for Digiflow, a process making software

2017 **BoardMaestro(Web portfolio)**.
- Designed and implemented a board meeting automation app(iOS)

Relevant Courseworks

Artificial Intelligence, Automated Learning and Data Analysis, Machine Learning, Spatial Temporal Data Mining, Database Management Systems.

Selected Honors, Scholarships & Awards

2020	Grace Hopper Scholar	*AnitaB.org*
2019	Nominee, Microsoft Ada Lovelace Fellowship 2020	*Department of CSC, NCSU*
2016	Champion (Built the prototype of a Tax Verification System)	*National Hackathon, Bangladesh*
2013-2016	University Merit Scholarship	*BUET*
2013-2016	Dean's List Scholarship	*BUET*

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