PREYA SHABRINA

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EDUCATION

North Carolina State University (NCSU), Raleigh, NC — **Aug 2018 - May 2023 (Expected)**
PhD in Computer Science - ML applied to Interlligent Tutoring Systems (ITS) — *GPA 3.70/4.00*
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh — **May 2012-Feb 2017**
B.Sc. in Computer Science and Engineering — *GPA 3.90/4.00*

EXPERIENCE

Graduate Research Assistant — **May 2019-Present**
Game2Learn Lab — *NCSU*
SE (ML) PhD Intern — **Summer 2022**
Choice & Competition Eng Team — *Meta Platforms Inc.*
SE (ML) PhD Intern — **May 2021 - Aug 2021**
App Commerce Growth Intelligence — *Meta Platforms Inc.*
Summer Instructor — **May 2020 - Jul 2020**
C and Software Tools — *NCSU*
Graduate Teaching Assistant — **Aug 2018-May 2019**
Computer Organization and Assembly Language — *NCSU*
Software Engineer — **Mar 2017-Jul 2018**
iOS and Web App Development — *Infosapex Limited, Bangladesh*

TECHNICAL SKILLS

- **Machine Learning:** Linear/Non-Linear Models, RL/DL, Supervised/Unsupervised/Semi-Supervised Learning, Time-series (LSTM), Missing Data Handling, Feature Selection and Engineering, NLP, Multimodal Learning, Graph Mining
- **Programming Languages and Tools:** Python, R, C/C++, Java, Swift, Objective C, MySQL, PHP, JS, Django, Redis, PostgreSQL, Git, Hive, Presto
- **Libraries and Frameworks:** Pandas, NumPy, SciPy, Scikit-learn, Tensorflow, Keras, PyTorch
- **Data Tools:** Weka, RStudio, Jupyter Notebook, Visualization [R (ggplot2), Python (GraphViz, matplotlib, skimage, pillow)]

PROJECTS

[Dissertation] Data-Driven Support in Intelligent Tutoring Systems — **Jan 2020-Present**
Research Project, Game2Learn Lab — *NCSU*
- Evaluated a novel data-driven programming hint system based on its impact on novice programming behaviour [Paper CSEDM, 2020 - acceptance rate 25%] [Extended Journal submitted to IEEE TLT].
- Improving and Modeling students' subgoaling skills using data-driven interventions and ML methods [on-going].

Educational Math Game Data Analytics — **Jan 2019 - Dec 2019**
Research Project, Game2Learn Lab — *NCSU*
- Modeled relationship between gameplay session features and student performance using sequential gameplay data [Paper accepted at LAK 2020 - Acceptance rate 33.7%] (github).

User Engagement and Content Modeling — **Summer 2021 - 2022**
Internship Project — *Facebook/Meta Platform Inc.*
- Developed a XGBoost model to predict users' engagement using recent engagement features aggregated along temporal axis.
- Developed a multimodal model for post classification using text/video embeddings.

Terrain Prediction for Robotic Limb Operation — **Spring 2021**
Course Project, Neural Networks and Deep Learning — *NCSU*
- Trained a terrain prediction model using time-series coordinate data with 93% accuracy for better robotic limb operation (github).

Change Detection in Satellite Imagery — **Spring 2020**
Course Project, Spatial and Temporal Data Mining — *NCSU*
- Implemented a model with >90% accuracy for change detection using U-net based semantic segmentation and an unsupervised change detection algorithm (github).

Missing Value Imputation in Clinical Temporal Data — **Fall 2019**
Course Project, Machine Learning — *NCSU*
- 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 (github).

Industry Projects — **Mar 2017-Jul 2018**
iOS and Web-based Apps — *Infosapex Limited, Bangladesh*
- Designed and constructed an augmented reality based iOS app to find out nearby properties for sale or lease.
- Implemented a tuberculosis treatment data analysis tool to get insights on tuberculosis spread around the country.
- Built a board meeting automation iOS app (Boardmaestro Web portfolio).