# Khandaker Abrar Nadib

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## RESEARCH INTERESTS

My research interest is at the intersection of Social Computing, Human-Computer Interaction (HCI), and Privacy and Security. Specifically, I am interested in conducting research focusing on understanding and improving user experiences in digital environments.

## PUBLICATIONS

**Interaction Based Credibility Analysis of News on Facebook Using Machine Learning Methodologies**

- Published in 16th International Conference on Signal Image Technology & Internet based Systems (SITIS2022).
- **Method:** Predictive Modeling Study; **Analysis:** Exploratory Data Analysis, Machine Learning.

## RESEARCH EXPERIENCE

**News Credibility Analysis on Facebook using User Interactions**     2021 - 2022

*Supervisors: Dr. Sadia Sharmin (BUET)*

- The goal was to propose a more efficient solution to determine news authenticity than existing methods.
- We developed a method of detecting fake news using interaction metrics on Facebook.
- Employed Machine Learning methodologies to classify public Facebook posts based on authenticity.
- The proposed method outperforms existing content-based and NLP-based solutions and is also language-independent.
- **Tech**: scikit-learn, pandas, matplotlib.

## EDUCATION

**Bangladesh University of Engineering and Technology (BUET)**     Dhaka

*Bachelor of Science in Computer Science and Engineering*     *Feb 2017 – May,2022*

- **CGPA: 3.50/4.00** (Last two semesters: **3.82**)
- **Major CGPA: 3.68/4.00**

## STANDARDIZED TEST SCORES

**TOEFL**

*Speaking: 29, Reading: 29, Listening: 28, Writing: 28*     **114**

**GRE**

*Quant: 162, Verbal: 153, AWA: 4.5*     **319.5**

## WORK EXPERIENCE

**Software Engineer**     May 2022 – Present

*Optimizely, Dhaka*

*Digital Asset Management (DAM)*     *November 2022 – Present*

- Currently working in the Digital Asset Management (similar to Google Drive) team.
- Implemented Brand Template feature, which lets users create a Template for their brand and define Placeholders that other collaborators can edit. I also implemented Download, Export, Cloning, and Task integration features for Brand Templates.

- DAM Collections are a group of user-defined Assets, including Asset folders. I implemented Searching, Filtering, and Navigation within DAM Collection folders.
- Implemented various asset-specific features like meta information, asset relations, and bulk operations, which enhanced user ability to handle assets.
- Implemented breadcrumbs in the DAM Library to make the navigation more fluid for the users.
- Implemented various user activity tracking for analytics to gain useful insights.
- Made improvements to several backend and UI components in terms of accessibility, performance, and code quality.
- Upgraded and integrated GPT-3.5-turbo model for AI content generation.
- Handled user roles and privileges for various features.
- **Technologies:** Python, Flask, JavaScript, TypeScript, React.js, MySQL, MongoDB, Alembic, Celery, Elasticsearch

*Asset Renditions (AR)*                                            *May 2022 – October 2022*

- Worked on implementing and maintaining a feature Asset Rendition. This feature allows users to pre-define "Rendition types", using which whenever users upload a new asset, new "Renditions" of that asset are automatically generated in the background. Example use-case: a user may define two image rendition types- 1. Facebook- 1080*720 crop and Instagram- 720*720 crop. Then whenever the user uploads an image asset, two cropped images will automatically be generated with the given specifications.
- Implemented logging schemes by combining multiple services to enable users and developers to diagnose and debug errors.
- Built three services to generate asset renditions using the given specifications including image and video generators.
- Implemented stateless generators to scale horizontally and integrated asynchronous messaging for decoupling and scaling, for efficiency.
- Integrated the Rendition Service with the local development environment for developers.
- **Technologies:** Python, FastAPI, MySQL, PostgreSQL, Docker, Kubernetes, Message Queue

## Projects

**Online Art Gallery** | *Library: React.js, Node.js, Express.js, Mongoose, Database MongoDB*        2021
- Designed an e-commerce platform for an Art Gallery.

- Virtual exhibitions simulated using virtual rooms.

**AES (Advanced Encryption Standard)** | *Language: Python, Libraries: numpy*        2021
- Encryption and Decryption algorithm for 128-bit key size implemented using Python and numpy.

**Rendering scenes using Ray Tracing** | *Language: C, Libraries: OpenGL*        2022
- An interactive environment designed in C using OpenGL.

- Lighting for the environment implemented using the Phong Reflection Model

**Compiler for a Subset of C Language** | *Language: C Libraries: Flex, Bison, 8086*        2020
- Compiler with parser written in C.

- Compiles to 8086 machine code.

**Live Cricket Scoreboard** | *Libraries: JavaFX, Scenebuilder*        2020
- A headless app that displays live scores in tabular format.

- Basic files used for storage.

[Backend of an E-commerce Platform](#) | *Language: PHP, Database: PostgreSQL*          2021
  - Designed the backend of a buy-sell platform.

  - Showcased complex database queries.

## Awards and Honors

**Optimizely SPOT Award**                                               October 2023
*Nominated by teammates and manager.*
  - Awarded in recognition of excellent performance and contribution.

**Optimizely SPOT Award**                                                   July 2023
*Nominated by teammates and manager.*
  - Awarded in recognition of resolving challenging problems and performance.

**Board Merit Scholarship- HSC**                                               2016
*Education board scholarship*
  - Ranked 6th(male) in Dhaka board.

**Board Merit Scholarship- SSC**                                               2014
*Education board scholarship*

## Technical Skills

**Research Methods**: Data Scraping, Surveying, Interviewing
**Languages**: JavaScript, Python, Java, C/C++, SQL, PL/SQL
**Database**: MySQL, Oracle, MongoDB, PostgreSQL
**Frameworks**: Flask, React.js, Node.JS, Typescript, FastAPI, BootStrap
**Tools/Software**: Git, TensorFlow, Docker, PyCharm, IntelliJ, CodeBlocks, Visual Studio Code, Oracle SQL
Developer, Jupyter Notebook, Wireshark
**Libraries**: Pandas, NumPy, Keras, Matplotlib, OpenCV, OpenGL
**Scripting/Markup/Serialization**: Bash, TCL, dLateX, YAML, HTML, JSON;

## Volunteering and Leadership Experiences

**Vice President**                                           December 2021- May 2022
*BUET Computer Club*
  - In charge of organizing and running university events under the club's banner.

**Vice President**                                        February 2021- April 2022
*BUET Dance Club*
  - In charge of organizing events and workshops on campus.

## References

Dr. Sadia Sharmin,Associate Professor
Department of CSE, BUET
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