SAMIA KABIR

West Lafayette, IN | *kabirs@purdue.edu* | *www.samiakabir.com* | (979)446 – 7070

Education

Purdue University — West Lafayette, IN, USA
Ph.D. in Computer Science — *Jan. 2021 - Present*

Texas A&M University — College Station, TX, USA
Master of Science in Computer Science (M.Sc.) — *Aug. 2017 - May 2020*

Bangladesh University of Engineering and Technology — Dhaka, Bangladesh
Bachelor of Science in Computer Science and Engineering — *May 2010 - Sep. 2015*

Professional Experience

Intelligent Interactive System Lab, Purdue University — West Lafayette, IN
Ph.D. Student — *September. 2021 - Present*

- Designed and implemented machine learning(ML) algorithms using Python, NLTK, Gensim to identify intersectional bias in large news corpora.
- Designed and implemented an interactive visual analytic tool using Python Flask, D3.js, and React.js to identify and debug bias in large text corpora in real time.

ExpiWell, Inc — West Lafayette, IN
Visiting Graduate Research Intern — *May. 2021 - August. 2021*

- Worked closely with the software testing team and contributed both in the automated cypress testing and manual testing of their web and mobile application.
- Participated in weekly sprint meetings, contributed in documentation of weekly and quarterly activities.

School of Public Health, Texas A&M University — College Station, TX
Software Developer — *Oct. 2020 - Nov. 2020*

- Designed a simulation tool to visualize epidemiology data to help public health professionals.

SynchroGrid LLC — College Station, TX
Software Development Engineer Intern — *Jan. 2020 - May 2020*

- Reprogrammed and generated new modules in D3.js for entire data visualization system to obtain scalable and state of the art visualization.
- Contributed to the new release of SARA-3(Setting Automation Relay Assistant) in React and Typescript.
- Designed and developed a new visualization technique to facilitate zone based operations.

Aggie Graphics Group, Texas A&M University — College Station, TX
Graduate Student Researcher — *Sep. 2018 - May 2020*

- Designed and programmed a VR research application with 4 different navigation techniques using Unity and C# to visualize large volume of 3D data; Analyzed and experimented with 4 different spatial orientation and navigation techniques to compare their performance in VR. (**M.Sc. Thesis**)
- Programmed simulation applications for physics based rendering i.e. Particle, Cloth, Flock simulations using OpenGL,C++.

Indie Lab, Texas A&M University — College Station, TX
Graduate Research Assistant — *Sep. 2017 - Aug. 2018*

- Collaborated with ML research by developing user interface for explainable AI; Designed and developed information visualization tool using D3.js to quantify user trust in AI; Analyzed statistical data in R.
- Designed, programmed and experimented with a tool for graphical encoding of motion for quantitative data visualization using JavaScript, D3.js and R.

Samsung R&D — Dhaka, Bangladesh
Software Engineer Intern — *Aug. 2014 - Nov. 2014*

- Researched and documented features of an operating system Tizen to assist the software development team.

Skills

- **Programming Languages**: C++, JavaScript, TypeScript, Python, Julia, HTML, CSS, MATLAB
- **Web Development**: React.js, Node.js, D3.js, Flask, Yarn, Material UI
- **Machine Learning and Statistical Analysis**: PyTorch, NLTK, Gensim, R
- **Graphics and Rendering**: Unity, OpenGL
- **Database**: SQL, MongoDB
- **Software Testing**: Cypress
- **Agile Software Development**: Git, Jira, Bitbucket

Academic Projects

- **Interactive Bias Debug**: An interactive visual analytic tool using Python,Flask, D3.js, React.js to identify and debug intersectional bias in news corpora and language models.
- **Visual Aids for Navigation in VR**: A virtual reality tool developed with Unity to capture and compare the effects of visual aids with axis information on navigation and user Experience in virtual reality.
- **Taxi Trip Query Toolkit**: An interactive Visual-Query tool using MATLAB, D3.js, JavaScript for spatial and temporal query for NYC Taxi trip data.
- **Quad-Tree Visualization**: An interactive visualization of the popular data structure Quad-tree using D3.js and JavaScript that demonstrates the features and functionalities of Quad-Tree.
- **Story Time**: A story telling tool using Node.js and D3.js to interactively generate stories with a chat-bot.

Teaching Experience

Purdue University West Lafayette, IN
Graduate Teaching Assistant *Jan. 2021 - Present*

- Designed programming projects and conducted programming labs for CS undergraduate course- Introduction to Relational Database Systems.
- Conducted class lecture for CS undergraduate course- Digital Literacy.
- Assisted course instructors in designing and grading homeworks and programming assignments.

Texas A&M University College Station, TX
Graduate Teaching Assistant *Sep. 2018 - Dec. 2019*

- Assisted course instructors in conducting programming labs, grading homeworks and programming assignments for 3 Computer Science undergraduate courses- Data Structures and Algorithms, Introduction to Program Design and Concepts, and Computers and New Media.

United International University Dhaka, Bangladesh
Lecturer *Sep. 2015 - Aug. 2017*

- Prepared lectures, tutored, graded and conducted programming labs for undergraduate students in C programming, Algorithms, and Computer Architecture courses.

Publications

- Nourani, M., Kabir, S., Mohseni, S. and Ragan, E.D., 2019, October. The effects of meaningful and meaningless explanations on trust and perceived system accuracy in intelligent systems. In Proceedings of the AAAI Conference on Human Computation and Crowdsourcing (Vol. 7, pp. 97-105).
- Roy, C., Shanbhag, M., Rahman, T., Gogate, V., Ruozzi, N., Nourani, M., Ragan, E., and Kabir, S. Explainable Activity Recognition in Videos. Workshop on Explainable Smart Systems (ExSS), ACM Intelligent User Interfaces (IUI) Workshops 2019.
- Roy, C., Nourani, M., Shanbhag, M., Kabir, S., Rahman, T., Ragan, E., Ruozzi, N. and Gogate, V. (2019). Explainable Activity Recognition in Videos using Dynamic Cutset Networks. 3rd Workshop of Tractable Probabilistic Modeling (TPM 2019).
- Mehnaz Tabassum, Tanzima Hashem, and Samia Kabir. "A crowd enabled approach for processing nearest neighbor and range queries in incomplete databases with accuracy guarantee." Pervasive and Mobile Computing 39 (2017): 249-266.

Award

- Google WTM Scholar APAC 2014.
- Travel Scholarship from Department of Computer Science and Engineering, TAMU to attend Grace Hopper Celebration of Women in Computing Conference, 2018.

Work Authorization

Authorize to work in United States with CPT.