Sajia Zafreen

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TECHNICAL SKILLS

Programming Languages	Testing	Tools/Frameworks	Machine Learning
Java, Python, C, C#, HTML, CSS, PHP, JavaScript, jQuery, SQL, PostgreSQL	CI/CD, Test-Driven Software Development, Travis, GitHub Actions, Unit testing, Integration Testing	Git, Visual Studio, Latex, Vagrant, Docker, Apache, Heroku, Django REST, .NET Core, Bootstrap, Excel, Linux, Windows	TensorFlow, Keras, Scikit-learn, NLTK, NumPy, Pandas

EXPERIENCE

Research Experience for Undergraduates(REU)   May 2021 – Aug. 2021

Blockchain Technology, Funded by NSF   *Boise State University - Boise, ID*

- Designed novel decentralized architecture for secured data access and collaboration with IPFS.
- Implemented a non-monetary incentive quorum-based protocol using blockchain.
- Simulated and measured scalability of 5000 users on 10, 30 and 50 transactions per block in Java.
- Technical paper/ Publication: "J. S. Gazsi, **S. Zafreen**, G. G. Dagher and M. Long, "VAULT: A Scalable Blockchain-Based Protocol for Secure Data Access and Collaboration" in *2021 IEEE International Conference on Blockchain.* doi:10.1109/Blockchain53845.2021.00059.

Teaching Assistant   Aug. 2018 – Dec. 2021

Electrical and Computer Engineering   *Boise State University - Boise, ID*

- Planned and graded lab reports for a course of 300 students each semester.
- Prepared review presentations every week for a group of 25 teaching assistants.
- Communicated with lead TA every 48 hours on grading updates to maintain consistency.
- Maintained a social media page of 140 followers to spread awareness on energy conservation.

PROJECTS

PaintCube │ *Django RESTful API, Docker, PostgreSQL, Python*   *github.com/zafs23/PaintCube*

- Built a backend API with Django rest framework to upload paintings.
- Implemented test-driven development and automated testing by running 51-unit tests.
- Practiced integration testing by using Travis-CI and linting by using flake8.
- Added filtering for categories and supplies to make the API user-friendly.
- Implemented user authentication and entity endpoints and managed database in PostgreSQL.

Bioinformatics │ *OOP, Java*   *github.com/zafs23/Bioinformatics*

- Mapped DNA sequence length of 34821+ base pair using BTree.
- Searched the BTree to find the frequencies of different lengths of patterns using the BTree.
- Implemented cache to reduce memory usage by 73%.

DB Shell Grading │ *SQL, Java*   *github.com/zafs23/DB_Shell_Grading*

- Designed database schema and E-R model.
- Wrote 16 queries and prepared statements to implement the grading system of a class.

EDUCATION

B.S. in Computer Science, 3.88/4.00   Aug. 2018 – Dec. 2021

Boise State University, Boise ID

SKILLS

Natural Language Processing, Neural Network, Logistic Regression, Supervised/Unsupervised Learning, Data Structure and Algorithms, Web Development, Virtual Software Development, Database System Usage, Relational DB, HTTP/HTTPS, Human-Computer Interaction, UX Design, User Interface design, XAMPP, Maven, VMware, Mapping, Shell Scripting, Feedback, Consistency, Fitts's Law, Schneiderman's eight golden rules, Git Version Control, Agile Methodologies, Scrum Development Process, Microprocessor, Engineering Statistics, Verilog, VHDL, FPGA.