

Provakar Mondal

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Experience

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| Graduate Research Assistant | Virginia Tech, Blacksburg, Virginia | Aug 2021 - Present |
| <ul style="list-style-type: none">• Conducting research in Distributed Replicated Data Systems and Automated Fuzz Testing.<ul style="list-style-type: none">– Developed a middleware to add advanced functionalities to Conflict-Free Replicated Data Types (CRDTs) libraries without modifying the source code, which benefits application developers from add-hoc solutions.– Improved Software Engineering Support to Distributed Systems using binary instrumentation that enhances debugging for the systems.– Working on performance improvement for Greybox Fuzz Testing by improving the snapshots mechanism for existing fuzzers. | | |
| Software Engineer | Samsung R&D Institute, Bangladesh | May 2019 - Jul 2021 |
| <ul style="list-style-type: none">• Worked on features implementation of Windows Samsung Notes and Windows SmartThings Projects using C#, C++, and XAML.• Designed delta data transferable middleware to the cloud server for Samsung Notes.• Enabled cloud synchronization operations for note data and callback between the middleware and core application layer.• Bug fixing, quality testing, issue reporting, technical writing, and diagramming. | | |
| Software Engineer | Samsung Electronics, South Korea | Nov 2019 - Dec 2019 |
| <ul style="list-style-type: none">• Designed and developed a Proof of Concept (POC) for Samsung Notes using Java, C#, and XAML.• Subsequently, the Proof of Concept (POC) evolved into the flagship project, wherein I undertook the task of enriching its capabilities and transforming it into a commercially viable endeavor. | | |

Education

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|---|---------------------------------------|
| Ph.D. in Computer Science | Aug 2021 - May 2025 (Expected) |
| <ul style="list-style-type: none">• Virginia Tech, Blacksburg, Virginia, USA | |
| B.Sc. in Computer Science | Feb 2015 - Apr 2019 |
| <ul style="list-style-type: none">• Bangladesh University of Engineering and Technology, Dhaka, Bangladesh | |

Technical skills

- **Languages:** Golang, Python, Java, Scala, C#, C, C++, JavaScript, TypeScript, Prolog, CSS, XAML, HTML
- **Databases:** Oracle, MySQL, MongoDB, SQLite
- **Platforms:** UWP, .NET, Android Native
- **Frameworks:** Django, React JS, Java FX
- **DevOps:** Git, Perforce, Docker, Kubernetes
- **Cloud Services:** Firebase, Google Cloud
- **ML/ Deep learning:** Jupyter Notebook, Sklearn, TensorFlow, PyTorch, Keras
- **Data science related:** Numpy, Pandas, Matplotlib

Selected Projects

- **Relevance Ranking for Tweet Search:** Implemented an Information Retrieval (IR) model using BM25, RankNet, and TF-Ranking to rank the relevance of Twitter data about Covid-19 (Python, Node.js, TensorFlow) [details].
- **Improving Reliability for Replicated Data in Distributed Systems:** Ensured trustworthy distributed replication by integrating autonomous trust management into distributed systems that use replicated data (Golang, Python, socks5 proxy) [details].
- **Sentiment Analysis:** Implemented movie rating prediction using Deep Learning models LSTM (Long Short Term Memory), MLP (Multi-Layer Perceptron), and CNN (Convolutional Neural Network) (Python, TensorFlow, Keras) [code].
- **Online Flea Market:** Software project for buying and selling in the online market of second-hand products (Python, Django, JavaScript, and CSS) [code].
- **iCab:** Software Development Project to hire taxis with facilities like Uber (Java, Android Studio, Firebase) (Java, Android Studio, Firebase) [code].