# Ritwik Puri

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## EXPERIENCE

### CitiXsys
*Software Engineer*

Feb. 2024 – Present
*Noida, India*

- Part of new products division, involved in creation of cloud based POS products/systems.
- Leading cloud initiatives with a small team, including running, managing and building iVendNext Cloud.
- Built DevContainers for Cloud for enabling development right from the browser.
- Currently implementing a service for container autostarting/stopping for non-critical workloads based on requests, optimizing server resources and cost.
- Introduced Point Of Sale (POS) Authentication Mechanisms using QR, MSR and Biometric devices.
- Implemented POS Customer Display streaming using websockets (Socket.IO).
- Facilitated UAT environment creation from live site for allowing partners/customers to test newer updates, additional apps, etc safely.
- Built an AI Bot Framework using OpenAI's Assistant API for building bots & functions, making it easy for users to interact with the system. Built a Custom Chatbot Interface for the same.
- Contributed to the development of a RAG-based chatbot service designed to handle specific queries, translate natural language into SQL, and provide product how-to guidance by referencing internal documentation.
- Implemented Licensing Engine for Cloud for defining quotas on customer sites.
- Implemented CI/CD pipeline(s) using GitHub Actions to automate application release cycles, enhancing deployment efficiency and reliability.

### Frappe
*Software Engineer*

Sept. 2021 – Aug. 2023
*Remote*

- Core (Backend) Maintainer/Developer of the Frappe Framework, owned and scaled Database & Email modules.
- Introduced integer primary keys using sequences for increasing write speed along with decreasing index sizes in the database.
- Introduced OAuth based authentication for email (IMAP, POP & SMTP) client in the framework.
- Proposed architectural changes like removing additional Redis instance(s), which helped in simplifying deployments.
- Led the development of Submission Queue, for queuing heavy workloads/actions in the background, while mentoring a junior engineer.
- Made framework more maintainable by refactoring integrations and moving out independent modules into separate apps thus dropping unnecessary dependencies and reducing setup time.
- Acted as trainer for the Frappe Developer Certification, twice, training 50+ people whilst having a direct revenue impact(upwards of $25k).
- Reviewed more than 300 PRs, helping increase the test coverage of the framework from 50% to 68%.
- Worked with customer support team(s) to resolve bugs, handle feature requests and provide production support.

### Tafzs
*Python Developer - Intern*

Mar. 2021 – Sept. 2021
*Remote*

- Collaborated with high-profile clients, including IHS Markit and Previsico, enhancing project outcomes and delivering tailored solutions.
- Maintained existing ETL processes, with integrations to Azure services such as CosmosDB, Blob & Table storage.
- Developed, Deployed and Maintained ETL proof-of-concepts, end-to-end on services like Databricks and Azure Functions, integrating with Azure CI/CD Pipeline and Log analytics & Monitoring (Alert).

## PROJECTS

### Weakly Consistent Distributed File System *(C++, gRPC)*

- Developed a client-server model inspired by Andrew File System (AFS) with whole-file caching on the client-side and simple server-side locking.
- Implemented sync/async gRPC calls for efficient client-server communication. Managed file consistency through checksums, reader/writer locks, and synchronized client-server directories.

### Key Value Store with Raft consensus *(Java)*

- Implemented an at-most-once Key Value store based on the Raft consensus algorithm.
- Implemented Leader Election, Log Replication and Log Compaction.

## Technical Skills

**Languages**: Python, Golang(Go), SQL
**Frameworks**: Flask, Frappe
**Tools**: Git, Docker, MySQL/MariaDB, Redis, Shell Scripting, CI/CD

## Education

**Georgia Institute of Technology**                    Jan. 2024 – Present
*Master of Science (MS), Computer Science*                    *Remote*

**Bennett University**                    Jul. 2017 – Jun. 2021
*Bachelor of Technology, Computer Science and Engineering*                    *Noida, India*