

SWARNIM BARAPATRE

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EDUCATION

BITS, Pilani

Dual Degree: BE Chemical Engineering + MSc Biological Sciences

May 2019 – Aug 2024

WORK EXPERIENCE

Intern, Software Engineer, R&D Department, Mastersoft

Aug 2023 – Jun 2024

- Co-developed system architecture and implemented a high-traffic product, as part of a three person team.
- Built scalable backend systems with FastAPI, for optimal performance and reliability.
- Researched and developed backend systems in Go to assess advantages over currently used backend technologies.
- Developed internal toolchain for automating database management tasks, improving system reliability and data integrity.
- Resolved critical Linux Server issues, preventing significant downtime and data loss.

SKILLS

Languages: Python, Go, Java, Powershell, Bash, C, C++, Pascal
Frameworks: Flask, FastAPI, Microsoft SQL Server
Tools: Linux, Git, Postman, Vim, Nginx, L^AT_EX

PROJECTS

Employee Performance System

[Git](#)

- Designed and developed a multi-tenant application for streamlined productivity tracking, reducing annual costs by **Rs 53 Lakhs** by eliminating reliance on [external services](#).
- Facilitated confident remote talent recruitment through accurate productivity metrics.
- Implemented features such as interventionless atomic app updates, a live-updating configuration system, and encrypted activity logs.
- Utilized a diverse tech stack including Python, Powershell, Pascal, and Win32 APIs.

MS-SQL Suite of Tools

[Git](#)

- Crafted a suite of tools for the Microsoft SQL Server, achieving 85% time reduction in SQL task flows.
- Developed a tool to optimize memory consumption by identifying memory leaks in the database.
- Developed tools to compare and contrast database stored procedures and SQL functions, visualizing differences via automated reports and generating alter scripts to synchronize databases.
- Leveraged Python along with a host of useful libraries such as difflib, sqlparse, and pyodbc.

Persistent Queue System

[Git](#)

- Developed a resilient queue system to automate time-intensive tasks, ensuring FIFO completion and allowing for remote task addition.
- Implemented persistence to maintain queue integrity during system crashes.
- Reduced queue completion times by introducing optional parallel processing.
- Used FastAPI as the backend framework along with Pydantic for data validation.

OpenAI APIs

[Git](#)

- Developed a suite of APIs, harnessing the power of GPT-3.5 and GPT-4 to enhance educational practices.
- Implemented AI solutions for rubrik-based grading, SQL-driven report generation, question paper and course outcome generation to name a few.
- Used OpenAI via Python frameworks such as Flask and FastAPI with MS-SQL as the database.

Other Projects

[Git](#)

Other projects include: [golang API blueprint](#), [website vulnerability identifier](#), API health monitoring system, automation tools for Azure Blob Storage, etc.

EXTRA CURRICULARS

Swimming: Represented Maharashtra in National Championships. Multiple State Level Gold Medalist.