

SWARNIM BARAPATRE

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EDUCATION

BITS, Pilani

Dual Degree: BE Chemical Engineering + MSc Biological Sciences

May 2019 – Aug 2024

WORK EXPERIENCE

Software Engineer, R&D Department, Mastersoft

Aug 2023 – Jun 2024

- Designed system architecture and developed a high-traffic product, as part of a three person team.
- Built asynchronous and scalable backend systems with FastAPI.
- Researched and developed backend systems in Go to assess advantages over currently used backend technologies in the organization.
- Developed internal developer tools for the database and software development teams, cutting down hours of manual effort and reducing error surface.
- Resolved critical Linux Server issues, preventing significant downtime and data loss.

SKILLS

Programming Languages: Python, Go, Powershell, Bash, C, Pascal

Web Frameworks: [Flask](#), [FastAPI](#), [net/http](#), [Chi](#)

Databases: Microsoft SQL Server, SQLite, MongoDB

Tools/Technologies: Linux, Git, Postman, Vim, Nginx, \LaTeX

PROJECTS

Employee Performance System

[Git](#)

- Designed and developed a multi-tenant application for streamlined productivity tracking.
- Reduced 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.
- Used Python along with 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 multiple APIs leveraging the power of OpenAI to introduce innovative features.
- Implemented AI solutions for rubrik-based grading, SQL-driven report generation, question paper and course outcome generation to name a few.
- Utilized Flask and FastAPI with MS-SQL as the database.

Other Projects

[Git](#)

Other projects include: [personal website using golang + server side rendering](#), [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.