SWARNIM BARAPATRE

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EDUCATION

BITS, Pilani   May 2019 – Aug 2024
Dual Degree: BE Chemical Engineering + MSc Biological Sciences

WORK EXPERIENCE

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 reliabilty and data integrity.
- Resolved critical Linux Server issues, preventing significant downtime and data loss.

SKILLS

Languages:	Python, Go, Powershell, Bash, C, C++, Pascal
Frameworks:	Flask, FastAPI, net/http, Chi, Microsoft SQL Server
Tools:	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, achieveing 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.