

# SWARNIM BARAPATRE

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## EDUCATION

<b>BITS Pilani</b> <i>Bachelor's in Chemical Engineering + Master's in Biological Sciences</i>	Vasco da Gama, Goa May, 2019 — July, 2024
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## PROFESSIONAL EXPERIENCE

<b>AccurateIC</b> <i>FullStack Software Engineer, AI Department</i>	Pune, Maharashtra Aug, 2024 — Present
<ul style="list-style-type: none"><li>Responsible for the software architectural design and full-stack development of mission-critical software for the <b>Indian Navy</b> and the <b>German Federal Police</b>.</li><li>Drive technical decision-making and architecture planning towards making the software efficient, robust &amp; maintainable.</li><li>Identify performance bottlenecks &amp; carry out code optimization.</li><li>Mentor &amp; train junior developers and conduct code reviews to maintain quality and correctness.</li><li>Implement standard development practices to bring in uniformity and long term maintainability of projects.</li></ul>	
<b>MasterSoft ERP Solutions</b> <i>Software Engineering Intern, R&amp;D Department</i>	Nagpur, Maharashtra Aug, 2023 — June, 2024
<ul style="list-style-type: none"><li>Design system architecture and develop high-traffic products, as part of a small R&amp;D team.</li><li>Achieved savings of Rs 53 Lakhs annually.</li><li>Develop internal toolchains for developers inside the organisation resulting in time savings of upto 14 days.</li><li>Ensure system reliability and maximum uptime through Linux server maintenance and critical issue resolution.</li></ul>	

## SKILLS

<ul style="list-style-type: none"><li><b>Programming Languages:</b> TypeScript, JavaScript, Python, Golang, SQL, Bash, Powershell, Pascal</li><li><b>Frameworks:</b> React, AdonisJS, ExpressJS, Flask, FastAPI, Fiber</li><li><b>Databases:</b> PostgreSQL, SQLite, Microsoft SQL Server, MongoDB</li><li><b>Tools:</b> Vim, Emacs, Linux</li><li><b>Other Technologies:</b> AWS EC2, OAuth, WebSockets, Git, Nginx, LaTeX, Typst, ORM, GitLab API</li></ul>
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## PROJECTS

<b>ISACA — Intelligent Situational Awareness &amp; Collision Avoidance Ship</b>	Oct, 2024 — Present
<ul style="list-style-type: none"><li>Co-developed the ISACA application that runs the autonomous ship developed for the Indian Navy.</li><li>The application includes features such as: radar overlay, obstacle &amp; future trajectory visualization, planning routes on the world map, controlling sensor functionality (gps, radar, camera, etc), viewing camera feeds.</li><li>Achieved 40% reduction in CPU consumption by refactoring inefficiencies.</li><li>Proposed and implemented synchronized communication solution between the Ship and the Control Base.</li><li>Developed using a tried and tested tech stack of <i>ExpressJS, ReactJS, Tailwind, Vite and PostgreSQL</i>.</li></ul>	
<b>NeuroGen — Smart Monitoring &amp; Alert Systems for GenSets</b>	Dec, 2024 — Present
<ul style="list-style-type: none"><li>Designed the system architecture and database structure.</li><li>Features include: Predictive Maintenance, Multi-variate Anomaly Detection, Life Expectancy Simulations, Data Analysis &amp; Visualizations.</li><li>This application runs along with machine learning models in order to predict potential failures and provides alerts and recommendations.</li><li>Led the development of the web application from scratch using a modern tech stack using <i>AdonisJS, Lucid ORM, ReactJS, Tanstack Query, and Tailwind CSS</i>.</li></ul>	
<b>Panopticon — Employee Performance Measurement System</b>	Oct, 2023 — June, 2024
<ul style="list-style-type: none"><li>Designed and developed a multi-tenant application for streamlined employee productivity measurement.</li><li>Reduced annual costs by Rs 53 Lakhs by eliminating reliance on external services (DeskTime).</li><li>Facilitated confident remote talent recruitment through accurate productivity metrics.</li><li>Implemented features such as interventionless atomic app updates, a live-updating configuration system, and encrypted activity logs.</li><li>Tech Stack: <i>Python, Subprocess, Multi-threading, Pascal (Delphi), OpenCV, Powershell, Win32 APIs</i></li></ul>	

## MS-SQL Suite of Tools

Oct, 2023 — June, 2024

- Crafted a suite of tools for the Microsoft SQL Server meant for internal use by database developers, achieving 85% time reduction in SQL task flows.
- Developed a tool to optimize memory consumption by identifying memory leaks in the database, preventing database server crashes.
- Developed tools to compare and contrast database stored procedures and SQL functions, visualizing differences (side-by-side diff comparison) via automated reports and generating alter scripts to synchronize databases.
- Tech Stack: *Python, difflib, sqlparse, pyodbc*

## Kafkaesque — Persistent Queuing System

Oct, 2023 — June, 2024

- Developed a resilient queue system to automate time-intensive tasks, ensuring FIFO completion and allowing for remote task addition.
- Implemented persistence as well as optional parallel queue processing when FIFO completion is unimportant, resulting in upto 10x processing speed.
- Tech Stack: *Python, FastAPI, Pydantic*

## EXTRA CURRICULARS

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**Swimming:** National Swimmer. Multiple times State Gold Medalist.