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Swatantra Mitra
Junior Software Engineer

Portfolio: *SwaGymitra.com*
github.com/SwagyXD
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OBJECTIVE & INTEREST

Ambitious Junior Software Engineer with 8 months of experience in full-stack web and software development, specializing in performance optimization, scalable solutions, and seamless integration of communication protocols. Eager to contribute to a dynamic software engineering role and continuously expand my skills.

SKILLS

Languages	C++, Java, C#, PHP, JavaScript, HTML/CSS(Tailwind)
Frameworks	.NET, QT, React, Node JS, Express JS, Laravel
Tools and IDE	Visual Studio, Visual Studio Code, QT Creator, Git
Operating System	Windows, Linux
Database	MySQL, PostgreSQL, MongoDB
Quantitative Research	Data Visualization, Data Plotting, Network Protocol, Data Analytics, Generative AI

TECHNICAL EXPERIENCE & PROJECTS

Software Engineer - Radar Data Processing for Drone and Bird Detection [QT, C++, C#, .Net 4.5]   02/2024 — 09/2024
FalconX Electro PVT Ltd   *Hyderabad, Telangana*

- Designed and implemented an intuitive control GUI to provide a user-friendly interface for configuring, monitoring, and extracting valuable information from FPGA and microcontroller-based systems [**FPGA and microcontroller-based systems**].

- Created a 2D visualization interface to display FFT data received through ADC via Ethernet, improving data analysis and troubleshooting.

- Optimized code execution speed and addressed timing issues critical for real-time data processing, enhancing system performance by 40%.

- Integrated communication protocols such as UART and TCP/UDP to facilitate seamless data exchange between the control GUI and target hardware platforms.

- Documented the GUI development process, including design decisions, implementation details, and user guides, to facilitate knowledge transfer and future maintenance.

Real-Time Messenger Clone [PHP, Laravel, React, Tailwind CSS, MySQL] | Self Hosted
Self Development

- **Real-Time Communication:** Implemented WebSocket technology to enable instant messaging features, allowing users to send and receive messages in real-time.

- **User Authentication:** Designed and implemented secure user authentication and authorization mechanisms, ensuring data protection and user privacy.

- **Responsive UI:** Developed a responsive and user-friendly interface using Tailwind CSS, enhancing accessibility across various devices.

- **File Sharing Capabilities:** Integrated file upload and sharing capabilities, enabling users to exchange images and documents seamlessly.

- **SQL Query Optimization:** Optimized SQL queries for data retrieval, improving application performance and reducing response times by 30%.

MERN SHOP [MongoDB, ExpressJS, ReactJS, NodeJS]   **Project Link**
Self Development

- **User Account Management:** Developed a comprehensive user account management system, enabling users to create accounts, log in, and update their profile and password securely.

- **Secure Authentication:** Designed robust login, signup, OTP verification, password reset, and logout processes, ensuring high security and user trust.

- **Shopping Cart Functionality:** Implemented features for adding and removing items in the shopping cart, including the ability to update item quantities seamlessly.

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- **Product Browsing:** Designed a user-friendly interface with pagination for product display, and filtering options based on categories and ratings.

- **Built for Growth:** Architected the application to be scalable, capable of handling increasing user demands and providing a robust platform for future expansions.

SIP Calculator [ReactJS, ChartJS]   **Project Link**
Self Development

- Developed a comprehensive SIP calculator application that allows users to calculate the future value of periodic investments.

- Implemented the compound interest formula to accurately project wealth growth based on monthly investments, return rates, and time periods with Line charts and Doughnut Chart to display show year-by-year growth projection and distribution of invested amount vs. returns.

- Implemented robust error handling, including bounds checking for inputs and fallback calculations to ensure reliable results.

Smartphone Controlled Arduino Super Car / Arduino, Arduino IDE
College Projects   *Camellia Institute of Technology*

- The project includes a circuit diagram and code that can be uploaded to the Arduino board to enable Bluetooth functionality. Users can control the car using a dedicated app, allowing for movement in various directions.

EDUCATION

Bachelor in Electronics and Communication Engineering, *Camellia Institute of Technology*   2023
Diploma in Electronics and Communication Engineering, *Jangipur Government Polytechnic*   2020
12th, Science, *Narendrapur,Ramakrishna Mission*   2017

ACTIVITIES

 Installation and Setup of Server   **FalconX Electro PVT Ltd | 02/2024 — 09/2024**
- HPE Proliant DL380 G7 server, ensuring optimal performance and reliability for company operations.

STRENGTHS

Problem Solving
- Resolved complex software issues in previous role delivering a 40 percent reduction in long-standing unresolved problems with help of Generative AI.

Collaboration
- Help a cross-functional team of 3 developers in the successful execution of a critical project on time and under budget.

Adaptability
- Quickly incorporated new software updates in all projects, ensuring minimal disruption to workflow and maintaining project schedules.