

Barnit Basnet

Senior Full-Stack Engineer

Itahari-6, Sunsari, Nepal, +977-9842314388, barnit.basnet1@gmail.com

<https://github.com/barnit88>

<https://www.linkedin.com/in/barnit-basnet-244a651a6/>

Professional Summary:

Full-Stack Engineer with 6+ years of progressive experience, advancing from freelance developer to Senior Engineer through fintech, healthcare, and distributed systems domains. Recently architected a data processing platform that reduced enterprise workloads from 1 month to <1 day for clients, including **Walmart**. Core expertise in .NET/C#, React, microservices, and payment systems. Known for rapid learning, early ownership, and delivering scalable solutions across high availability production environments.

Skills:

Backend & Architecture

- **Languages & Frameworks:** C#, .NET Core, ASP.NET Core (Web API/MVC), Node.js, Express, Python, Django.
- **Architectural Patterns:** Microservices, MVC, CQRS (MediatR), Clean Architecture, Event-Driven Design.
- **System Resilience:** Circuit Breakers, Retry Policies, Rate Limiting, Fault Tolerance.
- **Concurrency:** Multithreading, Async/Await, Parallel Processing, Task Scheduling
- **Systems Automation:** WinRM, PowerShell Runspaces, LDAP/Active Directory, NFS, Distributed Orchestration.
- **API & Communication:** REST, SOAP, WebSockets, Server-Sent Events (SSE), Long Polling.
- **Security & Identity:** OAuth2, OpenID Connect, JWT, MFA.
- **Legacy:** VB.NET, WinForms, WebForms.

Data & Messaging:

- **Databases:** SQL Server, PostgreSQL, MySQL, MongoDB, Redis
- **Messaging & Event Streaming:** RabbitMQ, AWS SQS
- **Data Optimization:** Query Optimization, Indexing, Caching, Sharding, Partitioning

Frontend:

React, Angular, Webpack, Vite, Static Code Chunking and Optimization, Lazy Loading, Browser Caching, Browser Storage

Testing & Quality Assurance:

Unit Testing, Integration Testing, Code Coverage, Static Code Analysis, Formatting, CI Test Execution

Cloud Platforms:

AWS EC2, AWS S3, AWS RDS, AWS SQS, AWS SES, AWS CloudWatch, Azure DevOps, Azure EntraID

Infrastructure & DevOps:

Docker, CI/CD (TeamCity, Azure DevOps)

Observability & Monitoring:

Prometheus, Grafana, ELK Stack, Structured Logging, Metrics

Web Servers:

Nginx, IIS

Work Experience:

Audit Partnership Senior Software Engineer

<https://auditpartnership.com/> Aug 2023 - Present

- **Architected and delivered a distributed data processing** platform for PST-to-MSG conversion and MSG ingestion into relational databases, executing workloads in parallel across multiple servers with real-time progress visibility for clients.
- **Designed and owned a centralized orchestration layer** in which the API dynamically selected target virtual machines, assigned per-VM worker capacity, and remotely executed NFS-hosted executables via PowerShell sessions, enabling controlled, scalable parallel job execution.
- **Built a multi-step, high-throughput job pipeline** that dynamically generated task-specific execution scripts and executed them using PowerShell runspaces with thread-level parallelism, supporting high volume workloads at scale.
- **Scaled the PST to live database ingestion pipeline** to support high volume enterprise client workloads, including Walmart, by efficiently reading emails, parsing attachments, sanitizing and deduplicating data, and storing it in the database, reducing end-to-end processing time from a month to less than a day through optimized parallel execution.
- **Developed a centralized API server** responsible for pool management, job orchestration, distributed execution, and stepwise progress visualization.
- **Implemented real-time observability and execution** control using Server-Sent Events (SSE) for browser updates, WebSockets for cross-VM process coordination, and database-backed logging for auditing and troubleshooting.
- **Led team of 3 for frontend modernization from MVC to React SPA** by migrating organization grid, filters, and forms to a React single-page application with backend-driven, multi-tenant configuration, enabling reusable components, client-specific pipeline management, and faster iteration across customers.
- **Established engineering quality** standards across the team by introducing Git hooks, ESLint with custom rules for static code

analysis, Prettier for automated formatting, and a comprehensive linting pipeline, reducing production bugs and eliminating formatting debates in code reviews and improving code standard.

- **Tech Stack:** C#, ASP.NET Core MVC, ASP.NET Core Web Api, Console, SQL Server, Docker, Typescript, React, NAS, LDAP, Powershell, ELK Stack, WinRM

Butterfly Healthcare Contracted Full-Stack Engineer (Part-time)

<https://butterfly.healthcare/> Feb 2025 - Apr 2025

- **Integrated MYOB accounting** as an external service via a dedicated microservice, implementing asynchronous purchase order and invoice workflows using AWS SQS to ensure reliable, non-blocking synchronization with the core healthcare platform.
- **Implemented purchase order cancellation and re-creation workflows**, resolving data consistency issues such as duplicate items, incorrect charge sheets, and mismatched reconciliation states across prosthesis management and invoicing modules.
- **Added and refined freight and additional fee calculations** (including GST) across purchase orders, invoices, PDFs, and Excel exports, ensuring accurate financial reporting and alignment with accounting rules.
- **Diagnosed and mitigated a production email delivery failure caused by Amazon SES** address blacklisting, identifying misconfiguration where emails were sent via a default address and safely disabling the default-send path to restore system stability.
- **Tech Stack:** C#, ASP.NET Core Web Api, Typescript, Angular, Amazon EC2, Amazon RDS, Amazon SQS, TeamCity

AccAlly Contracted Frontend Engineer (Part-time)

June 2023 - July 2023

- **Developed a core, backend-driven Angular form component** as a contracted part-time engineer at AccAlly, enabling organizations to securely integrate third-party systems such as GitHub, Jira etc each with different authentication requirements, into a single access control platform, while also contributing to a small set of supporting UI pages.
- **Tech Stack:** Typescript, Angular

Vanilla Transtechnor Pvt. Ltd Full Stack Engineer

<https://vanillatech.ai/> June 2022 - Aug 2023

- **Contributed to high availability fintech platforms**, including e-wallets, payment gateways, and international remittance systems such as **Merchantrade Money** and **eRemit**, ensuring secure, real-time financial transactions.
- **Implemented OTP-based payment authorization flows** and refactored payment integration layer using factory pattern, replacing hardcoded conditional logic for third-party remittance providers and improving code maintainability and scalability.
- **Identified and remediated SQL injection vulnerabilities** in the Remit back-office application by migrating the query to Entity Framework.
- **Performed performance optimizations for data-heavy pages**, reducing API latency and page load times by trimming response payloads, enabling response compression, and introducing browser-side caching and preloading for filtered list and detail views.
- **Tech Stack:** C#, ASP.NET MVC, ASP.NET Core Web API, IIS, SQL Server, RabbitMQ, Typescript, Angular, ELK Stack

Cedar Gate Software Engineer

<https://www.cedargate.com/> Sep 2021 - Jul 2022

- **Worked on healthcare insurance platforms**, handling complex authorization and claims payment logic within a legacy VB.NET web form application.
- **Contributed to a browser modernization initiative**, migrating legacy applications previously limited to Internet Explorer to modern web browsers.
- **Developed a Client Setup Utility Windows Application** to integrate five separate Client Setup Utility Windows applications into a single application, ensuring pre-seeded data and business logic were correctly migrated for each application, and significantly simplifying new client onboarding.
- **Tech Stack:** VB WebForms, SQL Server, JavaScript

Trobus Technology Full Stack Engineer

Jan 2021 - Aug 2021

- **Sole developer for a web-based property management system**, delivering a full-stack solution with an Angular SPA frontend and ASP.NET Core Web API backend covering accounting, tenant and property management, contract and rent management, and billing, delivering end-to-end workflows for leased and owned properties.
- **Implemented secure access control** using JWT-based authentication with dynamic role management, per-page permissions (Read, Read/Write, Update), enabling fine-grained authorization across the application.
- **Directly collaborated with clients to gather requirements**, translate business needs into application features, and implement end-to-end workflows for property, lease, tenant, and accounting management.
- **Tech Stack:** C#, ASP.NET Core Web API, Typescript, Angular, SQL Server

Infocom Solutions Junior .Net Developer

June 2020 - Jan 2021

- Contributed to the development of a CRM platform managing sales, product outlets, and advertising campaigns.
- Built backend APIs and frontend components using ASP.NET and React.
- **Tech Stack:** C#, ASP.NET Core Web API, SQL Server, JavaScript, React, Redux

Freelance Software Engineer

Oct 2019 – June 2020

- Designed and delivered standalone management applications for small businesses, including a Windows Forms and local SQL server based accounting and stock management system for a crusher business, reused and adapted for a restaurant client.
- Developed a hotel booking web application using React for the frontend and Django for the backend.
- **Tech Stack:** C#, WinForms, Python, Django, JavaScript, React, SQL Server.

Personal Projects:

PST-extract:

PST-extract is a console application built to explore Microsoft Outlook PST (Personal Storage Table) files at the binary level, converting raw bytes into readable emails, attachments, and files. PST files are proprietary, layered storage formats used by Outlook to persist emails, attachments, folders, contacts, and related metadata in an indexed binary structure. Instead of relying on existing PST libraries, this project parses raw bytes using only system-level APIs and reconstructs messages and attachments by traversing the PST's three logical layers: Node Database (NDB), Lists, Tables, and Properties (LTP), and the Messaging layer.

- **Utilized memory-mapped files** to access large PST files as virtual memory, enabling efficient random reads without loading the entire file into RAM.

- **Parsed the Node Database (NDB) layer**, which acts as the PST's low-level storage engine for Outlook objects. Implemented traversal of the Node B-Tree and Block B-Tree to map logical Node IDs to physical Block IDs and file offsets.

- **Read and validated PST headers**, root references, and block metadata to safely navigate the file structure. Implemented XBLOCK / XXBLOCK reassembly logic to reconstruct fragmented data streams used for larger message bodies and attachments.

- **Built core components of the Lists, Tables, and Properties (LTP) layer** using Heap-on-Node (HN) and BTree-on-Heap (BTH) structures to interpret raw bytes as properties and tables.

- **Implemented a basic Messaging layer** to reconstruct folders, messages, and attachments from parsed metadata.

- **Implemented MIME-based attachment inference** to determine file types when filenames are missing.

- **Tech Stack:** C#, .NET Core

Education:

Bachelor's in Computer Engineering

Tribhuvan University

Awards:

MVP of the Month by **Audit Partnership**