Mohanpreet Narang

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Education and Skills

University of Waterloo (Graduated Jan 2023)
Bachelors in Mathematics | Computational Math Major(Honours) | CS Minor | Psychology Minor
Languages: HTML, CSS, Javascript, Typescript, SQL, C, C++, C#, Python, Dart.
Frameworks: NET core, Next JS, Express JS, Tailwind CSS, Sass, Django, Flutter.
Technologies & Tools: Node JS, React JS, NGINX, MongoDB, Redis, Firebase, PostgreSQL, REST APIs, JWT & OAuth.
Certifications: AWS Certified Developer - Associate, AWS Certified Practitioner

Experience

LearnWeb3   Jan. 2023 - Present
Full Stack Developer   *React, NET, MongoDB, AWS, Tailwind, Node JS, Redis, OAuth2.0*

- Developed **RESTful APIs** adhering to industry best practices, established **Oauth2.0** authentication and engineered a custom **middleware layer** to optimize API request handling, **improving average response time** by upto **15%**.
- Leveraged the **AWS cloud platform** to deploy and maintain **distributed servers** using **AWS EC2**, store course content using MongoDB and AWS S3, and utilized the **AWS Elastic Load Balancer(ELB)** to ensure **high availability** and **reduce infrastructure cost to 12% below budget**.
- Configured the **AWS CloudFront Content Delivery Network(CDN)** and utilized **Redis** to cache and serve static assets and content globally, **reducing latency and load times** for international users by upto **40%**.

Swap Solutions   Apr. 2021 - Dec. 2021
Jr. Full Stack Developer   *React, Next JS, Express JS, MongoDB, PostgreSQL, Firebase, Flutter, Typescript, NGINX*

- Collaborated with the team to overhaul the UI and redevelop the company's website to significantly improve the UX, performance, and SEO, **increasing** the monthly **website traffic** by over **8%.**
- Configured **CDN** and **Server Side Caching** using **Redis** to **reduce response time** by **20-30%** in multiple projects.
- **Improved company-wide productivity** and **reduced development time** by over **30%**, by introducing the **Agile Scrum Methodology** and collaborating with the HOD to implement it.
- Created an **API gateway** using **NGINX**, which supports **load balancing, reverse proxy, JWT authentication and Oauth2.0**. This gateway could be plugged into projects, potentially **reducing development time** by upto **20%**.

FlexBlockID Technologies   Jan. 2020 - Apr. 2020
Full Stack Developer Intern   *React, Next JS, Express JS, REST APIs, MongoDB, UI/UX Design*

- Developed a **RESTful API architecture** using the **Nodemailer** module to implement a customer contact form on the website along with an **automated response**, improving UX which led to an increase in **lead generation** by over **15%**.
- Implemented a **MongoDB** database to store, sort and manage customer information, thereby **improving efficiency** resulting in a reduction of overall **response time** by upto **20%.**

PAMAC Finserve   May. 2018 - Aug. 2018
Software Developer Intern   *C, C++, Code/Architecture Audit, Refactoring, Object Oriented Programming*

- Visited 6 branch offices to understand the workflow and **collaborated** with **10+ members** of the dev team to improve the **ERP software** by suggesting and developing **3 major features**, **improving employee satisfaction** significantly.
- Efficiently **refactored** the legacy software written in **C** to **C++**, overhauled the UX of the software and reduced redundancies, leading to a **boost in productivity** and employees' **document processing speed** by over **2 minutes($\sim$40%).**

Projects

Highly Scalable Url Shortener Service   *Express JS, NGINX, MongoDB, REST APIs, Redis, Server-side Caching*

- This project is inspired by Alex Xu's book "System Design Interview" and is a **highly scalable** URL shortener API which implements a **load balancer** using **NGINX** and the **Cache Aside pattern** for **server side caching** using **Redis**.
- The service can also utilize **sharding** using **MongoDB** and implements the **base 64 conversion** method to generate short URLs along with a **RESTful API** for redirection, with server side caching for fast response to recurring requests.

Ecommerce Website   *Node JS, Next JS, SASS, JWT, Payload CMS, Stripe, Docker*

- This is a fully functional Ecommerce website with a powerful admin dashboard built using **Payload CMS**. It supports **CRUD** operations by using a **RESTful API** architecture.
- It uses **Node JS**, **SASS** and **Next 14** written in **Typescript** for the frontend, **JWT** for authentication, **Stripe** integration for payment processing and **Payload CMS** for the database.