

## Inderdeep Singh

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### EDUCATION

#### Bishop's University

*Masters in computer science* (GPA 94.6/100)

Sherbrooke, QC

September 2021 – June 2023

- Relevant Coursework: Software Engineering, Network Programming and Distributed Algorithms, Data Visualization, Cryptography, Data Mining, Database Software Design.
- Mentored and coached over 30 undergraduate students in programming and web development as part of BU Tech Café Initiative. Resolved doubts, encouraged discussions, and conducted rigorous, hands-on coding sessions.

#### Birla Institute of Technology and Science, Pilani

*Bachelor of Engineering in Computer Science* (GPA 7.1/10, First Division)

Rajasthan, India

August 2016 – July 2020

- Relevant Coursework: Operating Systems, Machine Learning, Data Structures and Algorithms, Object-Oriented Programming, Discrete Mathematics, Image Processing

### PROJECTS

#### React Playground (React, JavaScript, Styled Components, Vite)

- (1200+ lines of code) A curated collection of 6 (and counting...) fun browser games and demos. Includes mini projects such as the classic **Tic-Tac-Toe** game, an arithmetic **Target Sum** game, an intuitive task management **Kanban board** and more.

#### Dwitter (Python, Django, BulmaCSS)

- A social network built with Django that handles limited-character text messages similar to Twitter. Allows users to create profiles, connect with friends, and share posts. The application has **over 200 registered users** and **500+ posts** shared so far.
- Designed a **scalable, resilient architecture** leveraging **AWS Elastic Beanstalk** that can handle **over 1000+ concurrent users**.

#### URL Shortener (Python, FastAPI)

- Provides a **100%** secure & reliable mechanism to reduce the number of characters in a URL, making it easier to read, remember and share. Utilized **Redis** caching to enhance performance, resulting in a **50%** reduction in response times for URL retrieval.
- Successfully handled edge cases, including invalid URLs, leading to a **95%** decrease in error rates. Reduced latency by **30%** by tuning database queries and employing serverless cloud solutions such as **AWS DynamoDB** and **AWS Lambda**.

#### Bulletin Board (C, C++)

- A multi-threaded, distributed TCP network server written in C++ using the **POSIX API** to allow users to store and retrieve messages. Incorporated concurrency management (mutexes & condition variables), thread pre-allocation and signal handling.
- Designed, implemented and tested an application protocol end-to-end for the 2PC atomic commitment consensus algorithm.

### EXPERIENCE

#### Birdeye

Software Developer

Gurgaon, India

November 2020 – July 2021

- Worked on **React** and **Spring Boot** extensively. Incorporated feature requests, resolved bugs, wrote complex business logic and prepared technical documentation. Collaborated with a team of 7 people and enriched existing system metrics by **17%**.
- Investigated & uncovered issues causing slow server start in local development; Reduced the application startup time from over 350sec to <70sec, leading to an optimized workflow and vastly improved developer experience.

#### Shorthills Tech.

Software Engineer Intern

Gurgaon, India

July 2019 – Dec 2019

- Developed an e-commerce app in django supporting an initial customer base of **10000+ users**. Built several features E2E, from identifying system requirements and dependencies to workload balancing, software implementation and testing.
- Launched a custom pop-up chat interface using **jQuery**, Django Channels and **WebSocket API**. Enabled accelerated query resolution and seamless feedback collection; Boosted customer satisfaction & engagement by up to **88%**.
- Mastered Docker in **<2 months** and delivered large-scale web deployment architectures while collaborating with a team of 4. Developed using test-driven development. Architecture currently hosts 7 web solutions used by **20000 plus active users**.

### SKILLS

- **Languages:** Python, Java, JavaScript (ES5/ES6), TypeScript, SQL, HTML, CSS, C#, C, C++
- **Frameworks:** React, Express.js, .NET, Next.js, Remix, Django, Spring, Spring Boot, FastAPI, Tailwind, Bootstrap, Cypress
- **Other:** Node.js, Docker, Kubernetes, Linux, git, GitHub, MySQL, Postgres, MongoDB, NoSQL, AWS, REST APIs, OAuth2
- **Skills:** Front-end, Agile, Back-end, Full-Stack, Micro-Services, CI/CD, SCRUM, Open Source, Unit Testing