Maninderpal Singh

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EDUCATION

Punjabi University — Percentile 89.8%
Department of Statistics — B.Sc. in Computer Science, Statistics & Mathematics — *Jul. 2019 – Jul. 2022*

EXPERIENCE

Buyceps — Dec 2022 – Sep 2023
Software Engineer — *Mumbai, India*
- **Lead backend engineer:** 'Buyceps Marketplace', producing fundamental platform level changes, such as unified authentication setup, order/shipment processing, data modeling etc
- **Search:** Developed an Algolia powered internal 'Product Browser', managing data indices and UI/UX for employees, to make browsing blazingly fast
- **Database load:** Responsible for noticable optimizations on major GraphQL resolvers and REST APIs, effectively reducing the N+1 problem by 75 percent, in terms of SQL calls

Studypaq — Oct 2022 – Dec 2022
Software Engineer — *California, US (Remote)*
- **Security:** Fixed critical vulnerability in company's payment accessible core product
- **API design:** Took responsibility of designing and developing core of the APIs and backend architecture for MVP Studyplan feature
- **Server performance:** Improved highly used endpoints' response by approx. 47% on average, improving initial server response time for SSR

PROJECTS

Hunter - Online contests hosting platform (SaaS) — Jan 2022 – Sep 2022
Repository Deployed at *hunter.cambo.in*
- **Backend:** Engineered the entire back-end architecture using Node.js and MySQL (Azure & PlanetScale)
- **Client:** Leveraged Angular framework, building components and services in TypeScript, consuming REST services
- **Auth:** Implemented argon2 hash authentication & GitHub OAuth as alternative option
- **Client code execution:** Wrote Python & Bash scripts to run inside Docker container that compiles, executes and test participants' code; supporting C, C++, JavaScript and Python
- **Deployment:** An NGINX instance initially on Azure's VM & DB service, then migrating to Oracle & PlanetScale

DinoPlusPlus - A 2D Game (ASCII Graphics) — Apr 2021 – May 2021
Repository
- **Gameplay:** Programmed the entire gameplay mechanics, menu system & animations without any specialised console game engine or code library
- **Frame desynchronization:** Fixed by caching the frame until fully computed and then drawing all at once
- **Collision detection:** Implemented proper edge detection of any object colliding, render time

BOP Music - Android Music Player — July 2021 – Oct 2021
Repository
- **UI/UX:** Built clean UI and smooth experience using motion layouts and following the principles of MVVM architecture
- **Data/services:** Implemented background player service with SQL room database

Contactless - WhatsApp's API driven android app — Jul 2020 – Aug 2020
Repository, *XDA Forum*
- **Android app:** Developed UI/UX using Kotlin consuming Web API allowing users to chat with any contact

TECHNICAL SKILLS

Programming/Scripting Languages : Python, C/C++, JavaScript/Typescript, Bash
Tools/Frameworks : Django, Angular, NextJs, Flask, Node, MongoDB, MySQL, Git, Docker, MS Excel
Technical : Operating-Systems, Statistics, Linear Programming, OOP Design, data structures and algorithms
Soft Skills : Communication, Management, Presentation