PRATHEEK DHANANJAYA

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EDUCATION:

University of Illinois, Chicago — **Chicago, Illinois**
Masters in Computer Science **(Graduation – May 2026)** — Aug 2024 – Present

- Coursework: Introduction to Networking, Network Security, Building Secure Computer Systems, Database Systems.

SJB Institute of Technology, Visvesvaraya Technological University — **Bengaluru, India**
Bachelor of Engineering in Information Science and Engineering — Aug 2018 – Aug 2022

- CGPA: 8.65/10, First Class with Distinction.
- Coursework: Data Structures and Applications, Computer Networks and Security, Advanced Java and J2EE, Cryptography.

SKILLS:

Programming Languages: Java, Maven, C, C++, Dart (used in Flutter), Python, React (Beginner), Typescript (Beginner)
GUI and Databases: HTML, CSS; MySQL, MongoDB.
Tools and Platforms: Spring Tool Suite, MongoDB Compass, AWS CloudWatch and CloudFront, Git, Jenkins, Wireshark and Ollama.

EXPERIENCE:

Bosch Global Software Technologies (BGSW) — **Bengaluru, India**
Software Engineer — Jan 2023 – Aug 2024

- Provided **connected vehicle solutions** for Mahindra & Mahindra's Commercial Vehicle Segment.
- Developed **REST APIs** in **Java 8** to support 'iMaxx' mobile and portal application, a product which allows owners and drivers of Mahindra vehicles to access live data, using **AWS S3 & SNS, MongoDB, MySQL**, etc. improving the user's experience through real-time notifications.
- Some of the features I've developed are as follows:
  - *Vehicle Checklist* – Checklist that the owner publishes to every driver, which needs to be completed before every consignment.
  - *Roadside Assistance* – Providing an emergency SOS from the application and routing a message to the emergence contacts.
  - *mShoppe* – nearby spare parts locator.
  - *Fleet Announcement* – Owner can create an announcement, create a poll for answers and send it to either drivers or fleet managers or both.
  - *In-App Rating & In-App Language* – User is prompted with a notification to rate the app after certain actions and is allowed to change the language to their preference from the option given. This feature introduced users by ~30% because of the regional language flexibility.
  - *Subscription Package Management* – OEM system admin can create and modify subscription packages to which the owners subscribe and employ among the drivers and managers.
  - *Vehicle Reports* – Generates individual and cumulative reports on vehicle alerts, vehicle expenses, etc, which had ~80% faster response time in generating it because of the incorporation of thymeleaf and **asynchronous framework**.
  - *Multi Factor Authentication* – Provides additional layer of security for data using Google Authenticator for OEM admin users in web portal.
- In the process of development, made use of many AWS services like **CloudWatch** for tracking the logs, **IotCore** for publishing a payload to a subscribed channel, **Code Pipeline** to ensure proper deployment over **Jenkins** build and **AWS Lambda**.
- While deploying, harnessed Jenkins pipeline to maintain a serverless deployment, fastened the deployment process by ~20%.

INTERNSHIP:

ClouDepend Systems — **Bengaluru, India**
Developer Intern — Dec 2021 – Jun 2022

- Worked on projects using procedural language and flutter, to provide **interoperability between Android and iOS**.
- 'Readability Analyzer,' a mobile application on both Android and iOS platforms, which achieved over 85% improvement in text readability scores through advanced analysis methods like Flesch-Kincaid, etc. using the **Dart** programming language and secured with **Google OAuth**.
- 'xPeak,' an application which provides an integrated test client management solution to facilitate interoperation of real-world devices with equipment's under test, was developed in **C programming language**.

ACADEMIC PROJECTS: (https://www.github.com/pratheek-dhananjaya)

ProcProtect: LLM powered Malware Detection using /proc file system

- A local **Linux cybersecurity daemon tool** leveraging the large language model **Llama 3.2 (Ollama)** for **on-device threat analysis**.
- Implemented **real-time** /proc file system monitoring to **detect malicious processes based on file path heuristics**.
- Enhanced system security by performing local analysis, ensuring data privacy and minimizing reliance on external servers.

Two Factor Authentication Using Morse Code

- Implemented an additional layer of security over the traditional PIN based authentication system, using **computer vision framework** and **Haar Cascade Algorithm**, through a keyless entry of passcode.
- This **python** model requires the user to enter a valid passcode through eye blinks, which is captured by the computer's camera module through **facial landmark detection**, in the form Morse Code, which had a success rate over 95% per authentication.
- This system helps in avoiding **Keylogger attacks** and increasing the security measures in places like ATM and Net Banking.

Event Management System

- A **console application** which purely runs on **C++**, harnessing the techniques of dynamic and linear hashing to store data in the form files.
- Application provided both a user side usage and an admin side usage, having access to perform **CRUD operations** on the events to be hosted.

Task Manager Application (Personal Project)

- A **React Application**, developed primarily to organize and manage daily tasks through filters like '**Completed'** and '**Active'**.
- A simple interface was developed using components like **list groups**, **buttons**, **input fields**, **checkboxes**, etc. over **React** + **TypeScript**.

Airline Ticket Reservation System with Currency Exchange (Personal Project)

- The application was developed in **Java**, where a user can create an account for login credentials, using which the user can book domestic or international flight tickets.
- Implemented all the fundamental concepts of Java, along with mapping to a database. This application also allowed the user to exchange currency for the respective destination, if the user is booking an international ticket and provided the user with a compiled report.

PAPER PRESENTATION AND PUBLICATION:

- **Two Factor Authentication Through Morse Code Using Eye Blinks** – **First author** to this paper, published in International Journal of All Research Education and Scientific Methods (**IJARESM**), in 2022. Link.
- Presented a seminar on the merits, demerits and plausible uses, types and flavors of '**Passkeys'** and how the future of **authentication** lies in the password-less technology. Link