

# PRAJWAL S VENKATESHMURTHY

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## EDUCATION

### Illinois Institute of Technology

Master of Computer Science, **GPA: 4.00/4.00**

Chicago, IL  
01/2023 - 12/2024

*Related Coursework: Advanced Database Organization, Computer Networks, Big Data Technologies*

### Visvesvaraya Technological University

Bachelor of Information Science & Engineering, **Cumulative GPA: 3.23/4.00**

India  
06/2015 - 06/2019

## RESEARCH EXPERIENCE

### Graduate Student Researcher (RES-MATCH Fall 2023)

Chicago, IL

*Illinois Institute of Technology*

09/2023-12/2023

- Augmented programmability, accessibility, and determinism of the CODES/ROSS router model by implementing **virtual functions** for **custom executability** and **state accessibility** during packet routing. Enabled advanced simulations through enhanced coordination.
- Integrated a **Python interpreter** within the CODES/ROSS platform through Python's C API. Established **synchronization** between the router model and Python scripts to enable flexible modeling and control using **firewall policies**. Improved programmability & usability.
- Prototyped an accurate Monte Carlo simulation to model light propagation and photon trajectories. **Simulated and analyzed spatial distribution** and patterns of **over 10,000 photon packets**, showcasing accurate modeling of absorption and scattering events.

## WORK EXPERIENCE

### Certa

India (Remote)

*Mid Frontend Engineer*

03/2022-11/2022

- Led the migration of the code-base from React v16 to v18, alongside an upgrade of React Query from v2 to v4, **culminating in a 10% enhancement in application responsiveness** and **a 30% decrease in load times**. — (*Webpack, React-Query, React Router*)
- Spearheaded the implementation of in-house tools and **enhanced test coverage for frontend components from 50% to 90%**, leading to **almost 70% reduction in post-release defects** and enhanced overall product stability. — (*Bash, Jest, RTL, Cypress*)
- Architected and implemented a proprietary stack-based design system, skillfully integrating elements from Ant Design to streamline the UI/UX development process and enhance interface consistency across the platform. This initiative **resulted in a 35% improvement in user experience scores** and **accelerated feature deployment by 25%**. — (*AntD, Custom Stack Design System, Styled Components*)
- Employed modern technologies to **optimize the software performance by 40%**, resulting in **a 50% increase in user engagement due to enhanced UI/UX**. Additionally, developed in-house scripts that enhanced developer productivity by nearly 50%.

### Snapwiz Edutech India (acquired by GoGuardian)

India (Hybrid)

*Software Engineer*

08/2019-03/2022

- Implemented advanced performance optimization techniques**, including front-end bundle optimization and route splitting, **resulting in a remarkable 50% reduction in both application load time and bundle size**. — (*Babel, CRA5, react-app-rewired*)
- Played a pivotal role in the development of critical product features, including a sophisticated subscription module and playlist module, **contributing to the product's functionality and user experience**. — (*Redux & Redux-Saga, Formik, Styled Components*)
- Collaborated** with stakeholders from Design & Product to **streamline requirements**, ensuring **alignment and efficiency** of project.
- Leveraged expertise in JavaScript, Typescript, React.js, Node.js, Express.js, Jenkins, Elastic Search, SQL, MongoDB and REST API to create custom frontend & backend integrations that **met unique project requirements** and exceeded customer expectations & **elevated code quality** by implementing rigorous unit testing practices, **resulting in a 20% increase in code coverage**.

## PROJECTS

- Database Manager** — A comprehensive data management system encompassing a Storage Manager for pagelevel operations, a Buffer Manager with LRU and FIFO caching strategies, and a Record Manager for table based CRUD operations and schema handling.
- Neural Image Captioner** — Implemented a Neural Image Caption Generation model with Visual Attention using PyTorch, leveraging the COCO dataset. The model utilizes attention mechanisms on pre-trained components to generate concise image captions.

## SKILLS

**Languages:** C, C++, Python, Java, Go, SQL, JavaScript (ES6+), TypeScript, Node.js, PHP, Shell Scripting, HTML5, CSS, Android

**Frameworks & Tools:** React.js, Vue.js, AngularJs, Next.js, Express.js, Webpack, Jest, Cypress, GraphQL, PyTorch, REST, IOT

**Backend & Database:** MySQL, PostgreSQL, Nginx, Redis, MongoDB, Hadoop Ecosystem (MapReduce, Pig, Hive), Apache Kafka

**Cloud, DevOps & Version Control:** Linux, AWS Cloud, Docker, Kubernetes, Git, Github, Jenkins, CI/CD pipelines

**Systems & Design:** Data Structures & Algorithms, Distributed Systems, Microservices Architecture, Debugging Techniques, Performance Analysis, Architectural Patterns, API Design & Integration, Concurrency & Parallelism, DevOps, SOLID Principles

**Soft Skills:** Effective Communication, Collaborative Teamwork, Adaptability, Leadership, Growth Mindset, Innovative Problem Solving