

Pratul Muthuraja

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EDUCATION

- Illinois Insitute of Technology** Chicago, USA
• *Master of Computer Science*
Courses: Big Data, Cloud Computing, Software Engineering, Virtual Machines
January 2021 - May 2023
- Anna University** Chennai, India
• *Master of Computer Science*
Courses: Operating Systems, Data Structures, Analysis Of Algorithms, Networking, Databases
June 2014 - May 2018

SKILLS

- **Languages:** Python, Go, JavaScript, SQL, Bash, HTML/CSS, Markdown
- **Frameworks:** Django, Flask, ReactJS, NodeJS, LAMP
- **Tools:** Kubernetes, Docker, GIT, PostgreSQL, MySQL, SQLite, NGINX, Helm, Gatsby, Hugo, Jenkins, ChatGPT
- **Platforms:** Linux, Web, Mac, AWS, GCP
- **Soft Skills:** Leadership, Event Management, Writing, Public Speaking, Time Management

EXPERIENCE

- Armour Chapter of Triangle** Chicago, USA
• *Full-Stack Developer (Volunteer, Full-time)* November 2023 - November 2024
 - **Tech Stack:** React.js, Nodejs, Javascript, TailwindCSS, PostgreSQL.
 - **Website:** Built a full-stack web application to securely manage social and event data for over 200K members.
 - **Optimize Backend:** Overhauled backend architecture, optimizing database queries and caching strategies to bring API response times under 100ms while cutting operational costs by 60%.
 - **Workflow Efficiency:** Designed and implemented event-driven batch jobs for real-time notifications and automated task scheduling, improving engagement and workflow efficiency.
 - **User Interface:** Led UI/UX development, working closely with stakeholders to create Figma wireframes and translating them into a highly responsive React frontend.
 - **System Reliability:** Improved system reliability to 99.99% uptime by setting up load balancing, auto-scaling, failover mechanisms, and database replication, minimizing downtime and ensuring high availability.
 - **Observability:** Introduced observability tools (logs, metrics, and traces) to enable proactive monitoring and reduce incident resolution time by 40%.
- Illinois Institute of Technology** Chicago, USA
• *Graduate Student Ambassador (Part-time)* August 2021 - December 2022
 - **Data Analysis:** Managed databases and generated reports on Salesforce; Analyzed prospective student data to improve response to Graduate Discover Day event resulting in 19% growth of incoming graduate students compared to 2020.
 - **Leadership:** Strong leadership and collaboration skills evidenced by organizing recruitment activities through campus tours, student panel, and events for the Graduate Admissions Office showing 37% better response rate.
- Narayana Glass Company** Madurai, India
• *Business Development Manager (Full-time)* June 2018 - December 2020
 - **Manager:** Upgraded heavy machinery resulting in increased productivity by 25% and implemented better safety standards.
 - **Market Penetration:** Achieved national market penetration resulting in 15% sales increase and 10% market value increase.

PROJECTS

- **Database Performance Analysis Tool:** (Graduate Research Project) Built an automated tool to deploy Cassandra, MongoDB and CouchDB clusters on AWS utilizing Terraform and Python scripts, resulting in a reduction in deployment time by 75%. Conducted automated rigorous testing in 2, 4, and 8 cluster modes to evaluate performance based on pre-defined criteria and recorded results using Matplotlib graphs for Data Visualization. Tech: Python, Cassandra, MongoDB, CouchDB, Terraform.
- **Home Lab:** Designed and built a 2 node cluster running Proxmox VE to learn, test, and experiment with self-hosting and server management. Honed automation skills and achieved 50% reduced reliance on cloud services. Implemented logging and monitoring using Loki and Grafana. Used Open Media Vault to convert HDD array to NAS. Set up remote access through Cloudflared Tunnel and used NGINX proxy manager to act as a reverse proxy. Tech Stack: Proxmox VE, Debian, Docker, Kubernetes, Bash, Loki, Grafana, Cloudflared Tunnel, NGINX.
- **Portfolio Website:** Built portfolio website using Hugo, an opensource static site generator considering its fast build times, vast plugins library, speed, ease of integration, and security to showcase technical skills, experience, personal projects, and achievements. Tech: Hugo, Go, Markdown.
- **Open-source Contributor - Meshery:** Have been contributing to Meshery, an open-source, cloud-native management plane designed to help with the deployment, operation, and lifecycle management of service meshes and cloud-native infrastructure since March 2025. Tech: Gatsby, React.js, Go.
- **Search Engine and Social Network(Web Development, Web Crawler, Search):** Created from scratch a social network and a search engine based on the idea of integrating Facebook and Google. The launched website was among top 1000 websites in India during 2012-2013. Tech: PHP, MySQL, HTML, CSS, WebSockets, JavaScript, RSS, XML (May '12)