LIKITHA SHANKAR

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EDUCATION

Illinois Institute of Technology — Chicago, US   2024 - 2026 (Expected)
Master of Science - Computer Science — CGPA: 3.8
Relevant Courses: DAA, Advanced OS, Advanced DBMS, Advanced Computer Networks, Cloud Computing, Software System Architecture

B N M Institute of Technology — Bengaluru, India   2017 - 2021
Bachelor of Engineering - Computer Science — CGPA: 3.9
Relevant Courses: OOPS, OS, DSA, DBMS, Computer Networks, Big Data, ML, Cloud Computing, Software Engineering, Web Technologies

SKILLS

Languages:	JavaScript (React, Node, TypeScript), Python, Java, C/C++, SQL, Bash
Frameworks/Tools:	React JS, GraphQL, Docker, Git, Postman, Jest, CI/CD, Jira
Databases:	PostgreSQL, MySQL, Oracle DB
Cloud/Platforms:	AWS, OCI, Linux, Windows

EXPERIENCE

Illinois Institute of Technology — Teaching Assistant   Aug 2025 – Present | Chicago, US
- Lead lab sessions for Systems Programming, guiding students through process management, concurrency, and scheduling concepts.
- Developed Python automation scripts to grade GitHub submissions and generate reports, improving grading efficiency by 50%.

AR Systems Co., Ltd — Software Engineer (Full Stack)   Apr 2022 – Mar 2024 | Tokyo, Japan
- **Engineered and optimized RESTful APIs** using ASP.Net/C# and GraphQL, enhancing backend–frontend data exchange by 2**0%**.
- **Redesigned backend architecture** to support higher concurrency, **reducing latency** under heavy user load.
- **Modernized UI** using React.js, creating responsive components that improved usability and cross-device accessibility.
- Developed Linux automation tools and backend scripts in Python and Bash, reducing manual workloads by **40%.**
- **Designed and deployed microservices** on OCI Cloud**, achieving 99.9% uptime** with **automated CI/CD pipelines**
- **Developed a Linux command-line tool** to automate CSV synchronization, **reducing upload time by 30%** and eliminating manual steps.
- **Optimized 200+ SQL queries**, cutting database response times from minutes to seconds through indexing and query refactoring.
- **Automated backend operations** with Python and Shell scripts, saving **10+ engineer-hours** weekly on routine tasks.

AR Systems Co., Ltd — Software Intern   Aug 2021 – Feb 2022 | Remote
- **Assisted in debugging and testing** backend VB.Net modules, ensuring stability and adherence to QA standards.
- **Localized internal tools** by implementing bilingual (Japanese–English) interfaces, improving accessibility for diverse teams
- **Collaborated with developers** to document and test new software features within Agile sprints.

PROJECTS

SysScore — Linux Security Framework   Aug 2025 - Present
- Developed a **cross-platform real-time system call monitoring and risk assessment agent** for Linux using **eBPF**, **BCC**, and **Python**.
- Implemented **stateful process tracking**, **container-aware security**, & **ensemble anomaly detection** (Isolation Forest, One-Class SVM, DBSCAN).
- Designed an **automated CLI dashboard** with real-time process risk scoring and configurable response actions (warn/freeze/kill).
- Achieved **<5% CPU overhead** with **>95% detection accuracy** for known attack patterns.
- Tech stack: Python, eBPF/BCC, Docker, scikit-learn, psutil, Linux/macOS, Bash, JSON

Benchmarking Cloud Performance — Bare Metal vs Containers vs Virtual Machines   Jan 2025
- Benchmarked **CPU, Memory, Disk, and Network** performance across **Baremetal, Docker Containers, and Virtual Machines** on **Chameleon Cloud**.
- Automated benchmarking using **Sysbench**, **iPerf**, and **Bash/Python scripts**; visualized performance scaling with **Matplotlib**.
- Quantified virtualization overhead, showing **containers achieve ~90% of bare-metal performance**, providing data-backed insights for cloud deployment choices.
- Tech stack: Bash, Docker, VirtualBox, SysBench, iPerf, Python, Linux

ACHIEVEMENTS

- Japanese Language Proficiency – **JLPT N3**
- **Mentored interns** and junior developers at AR Systems, improving team code quality and delivery speed
- **AWS Certified Solutions Architect** — **Associate**