# Tanishq Todkar

USA | +1 781-456-0335 | ttodkar@ncsu.edu | linkedin.com/in/tanishqtodkar | github.com/tvt15 | tanishq-todkar.netlify.app

## EDUCATION

North Carolina State University | *Masters of Computer Science* Aug 2023 – May 2025
Software Security, Automated Learning & Data Analysis, Cloud Computing, Database Management, Algorithms GPA: 3.89/4.0

MIT-World Peace University | *Bachelor of Technology in Computer Engineering* Aug 2019 – May 2023
Natural Language Processing, Machine Learning, Operating Systems, Object Oriented Programming GPA: 3.79/4.0

## WORK EXPERIENCE

**Research Software Developer** | NC State Dept. of CCEE Sep 2024 – Present

- Streamlined asynchronous task processing by integrating **RabbitMQ** with **Java**, enabling reliable message queuing and reducing latency for **PostgreSQL operations by 55%**, ensuring seamless data consistency and scalability.
- Configured **Redis** caching for Rest APIs, improving **response times by 40%** and scalability under high concurrency.
- Designed and implemented a secure **API**, integrating **AWS** services like **S3, Secrets Manager, and CloudWatch** Logs to ensure data safety and real-time log monitoring, reducing incident **resolution time by 30%.**
- Applied **TDD** with **Jest**, achieving 90%+ coverage, reducing production bugs by 30%, and ensuring stable backend services.

**Software Engineer** | NC State Dept. of Computer Science Jul 2024 – Oct 2024

- Orchestrated a containerized video streaming application on **AWS (EC2, S3, Route 53) using Kubernetes**, handling peak loads of **500+ users with 99.9% uptime**.
- Automated deployments with **CI/CD pipelines** using **Jenkins** and **GitHub** Actions, reducing deployment time by 40%**.**
- Leveraged **Terraform IaC** to manage infrastructure, improving scalability and reducing manual configuration **errors by 30%.**
- Implemented observability solutions with **Dynatrace**, **Elasticsearch**, and **Grafana**, reducing system response time by 25% through enhanced **metrics collection** and API correlation.

**Software Engineer** | MIT-WPU Labs Jan 2022 – May 2023

- Led a team of 3 interns to develop a web app using **ReactJS** and **PostgreSQL**, incorporating an ML model to summarize student answers, reducing grading time by 70% and significantly lowering teacher workload.
- Optimized scalability and performance with Redis caching and **Express** rate limiter, reducing **response times to 100ms**.
- Leveraged asynchronous operations and **Node.js** clustering to enhance API performance, supporting **1000+** concurrent users**.**

**Full Stack Developer Intern** | Canspirit.AI Mar 2022 – Jun 2022

- Engineered attendance tracking system using **Java** and **Spring Boot,** integrating facial recognition, improving analysis time by 30% and boosting participation.
- Generated **cross-platform** compatible interactive dashboards using **React**, enabling product owners to gain insights into usage patterns, resulting in a **20% increase in data-driven** decision-making efficiency.
- Developed and executed unit tests using **JUnit** to ensure the reliability and accuracy of application features, **reducing bugs by 25%** and improving overall code quality.

## SKILLS

**Languages:** Python, Java, C, JavaScript, TypeScript, Ruby, SQL, HTML5, CSS3, Shell Scripting, Go, C++
**Frameworks:** Node, Spring, Spring Boot, Express, Django, Angular, React, Android Studio, FastAPI, REST APIs
**Databases:** MySQL, PostgreSQL, OracleDB, MongoDB, MariaDB, Google Firestore, Google Firebase, Redshift
**Technologies:** Docker, AWS, Kubernetes, OpenCV, Google Cloud, Git, Tensorflow, Selenium, Copilot, Micro-services
**Certifications:** AWS CLF-002, Node.js, MongoDB & Express.js, PostgreSQL, 1st in MLH Hackathon, 1st in HackMIT.

## PROJECTS

**Java Chess Engine |** Game Engine + AI 🔗 | *Software Engineering Project*

- Pioneered **a Java-based chess engine** using Minimax & Alphabeta algorithms, delivering strategic **AI gameplay.**
- Currently integrating into an **Angular** website using **WebSockets** to facilitate real-time interaction and enhance the UI.

GitLab Metrics API **| Open Source Project** 🔗 | *FullStack Project*

- Developed a **Python** and **Flask** app to extract key data from GitLab and GitHub using **OAuth** 2.0 for enhanced security.
- Tested **GraphQL** queries in Postman, improving real-time data streaming and boosting user efficiency by 30%.
- Automated AWS EC2 deployment using a CI/CD pipeline with GitHub Actions, ensuring minimal downtime.

**Hyperlocal Delivery App |** Cloud Architecture 🔗 | *Academic Project*

- Designed a secure and scalable **microservices**-based cloud **architecture** on AWS, leveraging services like Elastic Load Balancer (ELB), Elastic Container Service (ECS), Elastic Disaster Recovery (EDR) & Kubernetes Service (EKS).
- Conducted three **Kubernetes** experiments on **load balancing** with various **auto-scaling** configurations across two availability zones, optimizing resource allocation and improving **system scalability by 25%**.

Re-decor Assistant | **GenAI Application** | Python, LangChain, GPT API, Croma Vector DB GenAI Application

- Created a recommendation app using **Croma Vector DB, Python, LangChain, and GPT API** to suggest home decor items based on image and user prompts, leveraging a dataset of furniture descriptions, images, and customer reviews from Amazon.