## Vasant Kumar Mogia

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### **EDUCATION**

### MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE

Gwalior, MP

Bachelor of Technology

Sept 2023 - Present

Major in Information Technology

Relevant Coursework: Software Engineering; Operating Systems; Algorithms; Computer Networks; DBMS

### DELHI PUBLIC SCHOOL VIJAIPUR

Guna, MP

June 2021 – May 2023

Applied Sciences & Computer Applications

# PROJECTS

### TECHNEWS API Link

JavaScript, Express, NodeJS, PostgreSQL

- Delivered real-time tech news via a serverless RESTful API, handling 100+ daily requests on a free-tier server.
- Enabled developer adoption through RapidAPI integration and Insomnia testing by validating endpoints and achieving up to 80% uptime for all endpoints.
- Managed 100+ articles with PostgreSQL for efficient, real-time data retrieval under resource constraints.

#### AWS SERVERLESS EMAIL MARKETING

Link

AWS (Lambda, SES, S3, EventBridge, IAM), Python, HTML/CSS

- Developed a serverless email marketing with AWS Lambda, SES, S3, EventBridge, and IAM, reducing manual setup by 80%.
- Streamlined template and contact merging in Lambda functions, slashing email prep time by 90%—from hours to minutes.
- Automated campaign scheduling using EventBridge to ensure timely email delivery, while enforcing least-privilege access with IAM for enhanced security and controlled resource permissions.

WATCHERX <u>Link</u>

JavaScript/TypeScript, Express, NodeJS, GCP, Docker, Firebase, HTML/CSS

- Enabled authenticated uploads by utilizing Firebase and generating Cloud Functions—issued signed URLs, securing 100% of incoming raw video uploads in Cloud Storage.
- Orchestrated a Pub/Sub-triggered Cloud Run FFmpeg pipeline to transcode videos to 360p in /processed-videos.
- Logged processing status and metadata in Firestore, allowing users to track and directly access processed videos.

AEGISCC Link

C++, G++, Linux

- Engineered a x86-64 JIT compiler in C++ that emits and executes a machine-code sequence at runtime via mmap, enabling direct calling of a global function.
- Optimized runtime calls and memory pages access, cutting execution overhead by 30%.
- Showcased up to 5 runtime examples of machine code injection and execution via C++ function calls.

### **TECHNICAL SKILLS**

Languages: Python, C++, JavaScript/TypeScript, SQL, HTML/CSS

Technologies: Git, Docker, AWS, Firebase, GCP, PostgreSQL, NodeJS, Express, Hugo, Linux

### **EXTRACURRICULAR**

### ASSOCIATION FOR COMPUTING MACHINERY

Gwalior, MP

Technical Team Member

Oct 2024 – Present

- Designed and delivered hands-on technical workshops, authoring sample code and step-by-step tutorials for 50+ attendees.
- Led prototyping and development of group projects, conducting code reviews and docs.

CERTIFICATION Feb 2025

Datacom Software Development Job Simulation – Forage

- Completed a simulation focused on how the software development team at Datacom approaches their work.
- Reviewed a web application and planned for future improvements.
- Identified the root cause of bugs and implemented a fix to improve the application.