Aman Tripathi

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Education

- **Indian Institute of Technology, Jodhpur** — Rajasthan, India
  Bachelor of Technology - Electrical Engineering — *August 2021 - June 2025*
  Courses: *Computer Architecture, Data Structures and Algorithm, Machine Learning, Advanced Computer vision, Signals and Systems*
- **Army Public School, Varanasi** — U.P, India
  Higher Secondary Education — *August 2018 - June 2020*
  Courses: *Mathematics, Physics, Chemistry, Information Technology*

Skills Summary

- **Languages**: Python, C++, JavaScript, SQL, Typescript, JAVA
- **Frameworks**: Scikit, SpaCy, TensorFlow, Keras, Django, NodeJS
- **Tools**: Kubernetes, Docker, GIT, PostgreSQL, MySQL, OOPS
- **Platforms**: Linux, Web, Windows, Arduino, Raspberry, AWS

Experience

- **ZeForge Developer Community**
  Open Source Developer(Part-Time) — *Sept 2024 - Oct 2024*
  - Developed and integrated comprehensive unit and integration tests using Jest for backend API endpoints, ensuring reliability and early detection of bugs. Increased test coverage by focusing on core features and edge cases.
  - Implemented a robust CI/CD pipeline using GitHub Actions, automating the test suite to run on each push and pull request. Configured the pipeline to execute Jest tests in a dedicated test environment, ensuring new changes were stable before merging.
- **Bonjour Inde Voyage pvt ltd** — Remote
  Full Stack Developer Intern (Full-time) — *May 2024 - July 2024*
  - Contributed to the development and execution of secure phone OTP-based login systems using Firebase, managing authentication for over 100 daily users.
  - Designed and optimized database schema to facilitate data access and guarantee scalability for future expansion. Implemented server-side validation to safeguard sensitive information and ensure data integrity, thereby enhancing security.
- **Multi-Model Interaction Lab** — IIT Jodhpur
  Student Researcher (Full-time) — *May 2023 - June 2023*
  - Examined how GANs function and how they can transform a latent code from a random distribution into a realistic image. Characterized the latent code and identified various orthogonal subspace, each corresponding to distinct image attributes.
  - Discovering the foundation of the acquired subspaces and identifying appropriate coefficients (coefficients of linear combination) to reduce the undesirable alterations in other attributes is crucial. Analyzing the boundaries of the obtained coefficient using limits provided by InterfaceGAN. By mapping the coefficients of the input image to the target image, we can control the attributes of the input image.

Projects

- **Peripheral Attack on Operating System *(Work in progress)***: *(Linux, C++, Assembly)*: Conducted a buffer overflow attack on the xv6 operating system, identifying vulnerabilities in memory management and application security. Implemented security techniques such as Address Space Layout Randomization (ASLR) to mitigate the attack, enhancing system protection against buffer overflow exploits.
- **RealTime Chatting**: *(Python, Django, socket.io, React)*: Created a real-time chat application using Python and Django as the backend framework, with React and Socket.IO powering the client side. Leveraged WebSocket connections to enable low-latency, bi-directional communication between users, facilitating an enhanced chat experience. Integrated robust RESTful APIs to manage user data and authentication efficiently. **Github**
- **CODE-COLLAB**: *(NodeJs, ReactJs, socket.io, ExpressJs)*: CodeCollab is a real-time coding platform that allows multiple clients to collaborate and code. Used web-socket to establish real-time connections and provide synchronization, while employing webRTC for video calling facilities. Added multiple language options along with a compilation feature. **Github**
- **AI Content Creator**: *(Next.js, Typescript, Tailwind CSS)*: Developed an AI-driven content creation tool capable of generating high-quality text for various applications, including blogs, social media posts, and marketing materials. Used the Gemini API for content generation, Clerk for authentication, and the drizzle ORM for data management. **Github**
- **Advanced To-Do List**: *(JavaScript)*: Created a dynamic and user-friendly to-do list application using JavaScript (Vanilla JS) and HTML. Implemented features such as persistent data storage with local Storage, marking tasks as complete, and adding, modifying, and deleting tasks. Prepared a responsive user interface for compatibility with desktop and mobile devices. **Github**