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*

Skills Summary

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

Experience

- **Bonjour Inde Voyage pvt ltd** — Remote
  Full Stack Developer (Full-time) — *May 2024 - July 2024*
  - Contributed in the development and execution of secure phone OTP-based login systems that are based on Firebase.
  - Designed and optimized database schemas 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.
  - Integrated Razorpay for secure and seamless payment processing, ensuring compliance with industry standards for financial transactions.
- **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 coefficeients (coefficients of linear combination) to reduce the undesirable alterations in other attributes is crucial. Analyzing the boudaries 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

- **Pheriperal 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.
- **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 Gemni API for content generation, Clerk for authentication and the drizzle ORM for data management.
- **CODE-COLLAB**: *(NodeJs, ReactJs, socket.io, ExpressJs)*: CodeCollab is a real-time coding platform on which multiple clients can collaborate and code. Used websocket to establish real-time connections between multiple clients and provide synchronization. Used webRTC to enable video calling facilities. Added multiple language options along with a compilation feature.
- **CAN Protocol**: *(Inline Assembly)*: Implemented CAN protocol from scratch. Made a header file for initialization of registers addresses and structure of a message for communication. Implemented functionalities including CAN initialization, message transmission, and message reception.
- **Advanced To-Do List**: *JavaScript*: Created a JavaScript (Vanilla JS) and HTML-based dynamic and user-friendly to-do list application. Implemented features such as persistent data storage with localStorage, marking tasks as complete, and adding, modifying, and deleting tasks. Developed a responsive user interface for absolute compatibility with desktop and mobile devices.

Volunteer Experience

- Volunteer in Varchas'22, IIT Jodhpur
- Supported Public Relation Team Youth Conclave'22, IIT Jodhpur