Deep Lekhak

Waterloo, Ontario
548-994-1073 lekhakdeep10@gmail.com github.com/Deep03

Technical Skills

Languages: Python, Java, C, HTML/CSS, JavaScript, SQL, Bash
Developer Tools: VS Code, Eclipse, Git, IntelliJ, Docker
Technologies/Frameworks: React, Node.js, PostgreSQL, MongoDB, MySQL, TensorFlow, NumPy

Experience

WEA **May 2023 - September 2023**
Group Member *Waterloo, ON*

- Collaborated on a cross-institutional team of **5** from UW and Microsoft to conceptualize and design an AI-powered travel itinerary pipeline.
- Explored diverse methodologies for data storage, encryption, and project deployment, contributing to the project's robustness and security measures.
- Analyzed **5** data storage solutions, ultimately proposing Azure SQL Database with dynamic data masking for its scalability and ability to securely manage pseudonymization tokens via Azure Key Vault.

Hack The North **September 2022**
Organizer *Waterloo, ON*

- Contributed to the hackathon's success by taking charge of logistics, resulting in a smooth experience for participants.
- Accomplished proficient multitasking, decision-making, and problem-solving by effectively collaborating with cross-functional teams.

Math Tutor **March 2021 - September 2022**
Tutor *Waterloo, ON*

- Delivered **2-3** hours of individual tutoring sessions on advanced math topics, resulting in noticeable improvements in students' comprehension and performance.
- Effectively conveyed complex mathematical concepts in an understandable manner.

Projects

RSA Algorithm | *Java, PostgreSQL* **November 2023**

- Independently implemented the RSA algorithm, demonstrating proficiency in modular arithmetic and cryptography principles.
- Prioritized robust security by implementing a key size of **1024+** bits, exceeding industry standards for secure encryption and decryption.
- Designed a secure key storage system leveraging SHA-256 hashing and PostgreSQL database integration, ensuring data integrity and access control.

Facial Recognition AI | *Python, TensorFlow, Keras, FaceNet* **January 2024**

- Demonstrated ethical responsibility in AI development by opting for the Microsoft DigiFace dataset of **1 million** synthetic images.
- Built a FaceNet facial recognition model from scratch using TensorFlow, through independent research, achieving **90%** validation accuracy using **20%** of the dataset.
- Investigated and compared various FaceNet architecture variations, ultimately selecting the Inception-based model for its optimal balance of robustness and portability in real-world applications.

File Transfer Web App | *JavaScript, React, Node.js, MongoDB, PeerJS, WebRTC* **December 2023**

- Built and deployed a full-stack web application using the MERN stack for enhanced scalability.
- Enabled secure user access and data management by implementing a user authentication system using MongoDB/Atlas.
- Demonstrated expertise in real-time communication by integrating PeerJS and WebRTC technologies, enabling efficient and secure direct peer-to-peer file transfer functionality.

Education

University of Waterloo **September 2022 - May 2027**
Honors Bachelor of Mathematics with CS Minor(GPA 3.8) *Waterloo, ON*