SIDDHARTH SHARMA

https://www.linkedin.com/in/siddharthsharma99/ | https://github.com/SuperSid99
Email: szs7214@psu.edu Mobile: +1 (857)-381-4112

PUBLICATION AND RESEARCH

Object/Human tracking in 3D space Using Monocular Vision   May 2023 – August 2024
https://etda.libraries.psu.edu/catalog/29519szs7214   *The Pennsylvania State University*

- Developed a novel approach for tracking humans/objects in 3D space using monocular vision. The framework utilizes mathematical modeling to convert 2D visual data into absolute 3D coordinates, contributing to advancements in computer vision and robotics
- Derived equations for depth estimation utilizing vanishing points and perspective projection to enhance tracking accuracy.
- Designed algorithms based on mathematical principles to efficiently process and interpret 2D image data for 3D tracking.

A blockchain based private framework for facilitating digital forensics using IoT   August 2021 – May 2022
https://doi.org/10.47974/JDMSC-1733   *Gurur Gobind Singh Indraprastha University*

- Reverse engineered blockchain to analyze its architecture and applied insights to develop a new blockchain-based application.
- Proposed a private blockchain model to securely and efficiently manage forensic data within IoT environments.
- Created a framework ensuring the authenticity, traceability, and integrity of digital evidence in forensic investigations.
- Developed a blockchain from scratch using the $SHA256$ hashing algorithm and an alpha-numeric substitution cipher protocol.
- Deployed a multi-system communication network using sockets connecting $10+$ devices to implement an asynchronous database.
- Deployed a Virtual Private Network (VPN) infrastructure connecting over 10 computers across international locations.
- Implemented encryption and decryption protocols for various file formats by effectively manipulating and securing the file data.

EDUCATION

THE PENNSYLVANIA STATE UNIVERSITY   August 2022 – August 2024
Masters of Science in Computer Science (gpa-3.4/4)   *Pennsylvania, USA*

   * Teaching and Research Assistant - Teaching and grading Data structures and algorithm courses

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY   August 2018 – May 2022
Bachelor of Technology in Computer Engineering (gpa-8.2/10)   *Delhi, India*

Indian Institute of Technology Kharagpur   January 2022 – April 2022
Internet of Things - Elective Course

TECHNICAL SKILLS

- **Languages**   :   Python, C++, C, Swift, JavaScript, Node.js, MySQL, HTML, CSS, ReactJS
- **Libraries & Frameworks**   :   TensorFlow, Keras, NumPy, NLP, LLM, Pandas, CUDA, PyTorch, Deep Learning, Computer Vision
- **Skills**   :   Reverse-Engineering, Mechanistic Interpretability, Data-structures, Algorithms, Git, Artificial Intelligence, Machine Learning, Blockchain, Augmented / Virtual Reality, Unity, Data Science, Cyber Security, Internet of Things

WORK EXPERIENCE

Software Research And Development   October 2022 - May 2023
TE Connectivity   *Pennsylvania, USA*

   * Created a novel AI solution that increased efficiency by automating a manual process to find the Region of Interest in monochromatic low-contrast images, resulting in a 85% reduction in processing time and improved accuracy.
   * Constructed a neural network to detect data matrices in low-contrast images of machine surfaces, achieving an accuracy of 93%.
   * Generated a dataset of over $50,000$ images to improve model performance and robustness in challenging conditions.
   * Implemented efficiency enhancements to an established production line, resulting in a reduction of up to 6 months in production time and cost savings of up to $\$100,000$.

Software Research Co-op   March 2021 - June 2022
Deep LogicTech (TekMonks)   *Delhi, India*

   * Engineered an isolation forest based ML solution to detect cyber attacks on databases and SSH servers, attaining an accuracy of 90% in internal testing.

International Student Mentor   March 2023 - May 2024
The Pennsylvania State University   *Pennsylvania, USA*

   * Guided $10+$ international students in academic and cultural transition; led workshops on cross-cultural communication resulting in 25% increase in student satisfaction and 15% improvement in GPA
   * Crafted and executed community outreach programs, driving tangible contributions to the organization's mission and resulting in a 100% increase in community engagement.