Prashant Panta

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EDUCATION

Texas State University—GPA: 3.91 Exp. Graduation: May 2027
Computer Science (Honors), Ingram School of Engineering

PUBLICATIONS

Ahmed, T., Chen, H., & **Panta, P.** (2024). Human Motion Gait Analysis Using IMU Sensors. IEEE 14th International Conference on CYBER Technology in Automation, Control, and Intelligent Systems (CYBER), 714–719. https://doi.org/10.1109/cyber63482.2024.10748719

Panta, P. (2025). Applications of Wearable Sensors for Gait Analysis. Texas State Undergraduate Research Journal, 13(i). https://doi.org/10.58997/7bhxxm11

Pashupatinath—research eBook. (2023, June 26). Project Pashupatinath. https://pashupatinath.reinstallinghope.org/

RESEARCH EXPERIENCE

High Performance Computing Research Internship, TXST Division of IT Jan 2025 - Present

- Benchmarking AI inference workloads (ResNet-50, BERT, Whisper, YOLOv8, Llama 3.1) on LEAP2's NVIDIA A100 GPU and Intel Xeon Gold CPU nodes using SLURM job scheduling
- Measuring throughput, latency, and hardware utilization across GPU and CPU partitions; comparing results against published A100 baselines (MLPerf, CARAML) to characterize LEAP2's suitability for AI research workloads

Lehigh University, NSF RTA Program, Summer Research Intern Jun 2025 – Aug 2025

- Developed an autonomous underwater ROV using PID control on a Pixhawk flight controller, integrating six-degree-of-freedom thruster control on an NVIDIA Jetson Nano.
- Assisted with mechanical and electrical system integration; tested and refined control performance using QGroundControl
- Conducted 25+ NSF I-Corps customer discovery interviews to evaluate demand for modular underwater acoustic communication systems
- **Awarded 2nd** place out of 103 projects at the Lehigh University Summer Research Symposium

TXST CIVS Lab || Undergraduate Researcher Sep 2024 - Apr 2025

- Analyzed muscle fatigue and movement patterns using electromyography (EMG), motion sensors (IMU), and foot-pressure sensors to support construction worker safety research
- Led tutoring sessions on ergonomics, gait analysis, and workplace safety for 50+ students in collaboration with engineering faculty

PROJECTS

HackMIT 2025 Finalist (Top 10/360+ Projects, 1100 Participants) Sep 2025

- Built Bagaicha, a smart agriculture platform integrating 7-in-1 soil sensors and a web dashboard for real-time plant health monitoring
- Implemented a computer vision pipeline for plant species classification (92% accuracy) and personalized care recommendations

Autonomous F1TENTH Racecar || Lehigh Summer Internship Jun 2025– Aug 2025

- Revived 5+ F1TENTH autonomous racecars that had been inactive for over two years; migrated control systems from ROS1 to ROS2
- Refined PWM-based steering control logic by improving lap times by 18%, resulting in smoother and stable turning

High-Performance Computing || TXST Summer Workshop May 2025

- Trained and benchmarked multiple machine learning models (k-NN, SVM, CNN) on HPC cluster using SLURM job scheduler
- Reduced image preprocessing time by 60% for 5,000+ images using Python multiprocessing

EXPERIENCE & LEADERSHIP

Chief Information Officer Student Advisor || Texas State University Aug 2025 – Present

- Provide strategic advisement to university CIO and Vice President of IT on technology initiatives affecting 50,000+ students and faculty
- Co-led improvements to campus IP address roaming architecture and Wi-Fi routing systems, contributing to a $1.2M network infrastructure upgrade that increased online accessibility across campus

Director of International Affairs || Student Government Apr 2025 – Present

- Created the university's first Director of International Affairs role, establishing formal representation for 1,500+ international students
- Serve as liaison between international students, student government, and university administration

Vice President || Nepalese Student Association Apr 2025 – Present

- Representing 470+ Nepali students; preparing to support cultural events, student engagement efforts, and international student advocacy through upcoming initiatives and collaborative leadership

TECHNICAL SKILLS

Programming: Python, C++, JavaScript, SQL, LaTeX
Machine Learning & Data Science: TensorFlow,Scikit-learn,PyTorch, OpenCV, NumPy, Pandas, Matplotlib
Robotics & Autonomous Systems: ROS2, MAVLink, ArduPilot, Gazebo, RViz, QGroundControl, Linux
High-Performance Computing: SLURM job scheduling, parallel processing, cluster computing
Development Tools: Git, GitHub, Bitbucket, MATLAB, Jira, Confluence