

Aditya Kothuri

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EDUCATION

High School Diploma

Wakeland High School • 5.44/6.0`
GPA: 5.44/6.0 (Rank: 2 of 563) | Grade 11

EXPERIENCE

Robot Everest: Lead Engineer

Geologic Dome

May 2026 - Present

- Leading the first team in history to train a humanoid robot to summit Mount Everest (8,849 m), directing 8 engineers.
- Achieved a 100% pass rate across 68 stability scenarios and 8–20× push-recovery gains by building advanced reinforcement learning locomotion and manipulation policies for a 29-DoF, 60 kg humanoid.
- Validating robust alpine movement and terrain reconstruction pipelines in MuJoCo and IsaacSim across Unitree G1 and Agibot A3 platforms for high-altitude deployment.

Captain

Radicubs Robotics

May 2026 - Present

- Directing operations of the 2nd largest regional robotics programs in DFW, scaling the team to nearly 50 students while personally instructing advanced programming and electrical engineering.
- Secured nearly \$30,000 in company sponsorships and grants through cold outreach, sponsorship packets, and self-organized fundraising and outreach events.
- Lifted the team to 24th in its FIRST in Texas State championship division, the highest placement in the team's decade long history, winning competition awards at both district events.

Computer Vision Engineer

Geologic Dome

June 2026 - Present

- Built an endangered-species tracking system slated for field deployment in Salonga National Park, DRC in late 2026, validated across 500 video clips: 180,000 frames, 201,430 ground-truth boxes, 874 unique individuals.
- Benchmarked YOLO-based MegaDetector V6 variants and fine-tuned the detector on the park's own dataset to reach deployment-grade accuracy on wild, low-visibility footage.
- Cut identity switches by 87% (2,257 to 301), halved track fragmentation (2.48 to 1.27), and suppressed bounding-box jitter by 77% by lowering detection confidence thresholds and using ByteTrack to stitch the low-confidence boxes into continuous tracks.

RESEARCH

Real-to-Sim Humanoid Locomotion Pipeline

Geologic Dome

July 2026 - Present

- Engineered a real-to-sim pipeline converting captured alpine terrain into simulated training ground across five slope archetypes (0–35°) spanning the route's grade range, using LingBot-Map, Open3D, and Isaac Sim heightfields.
- Generated deterministic procedural terrain meshes (14,400 triangles) from those samples to train Unitree G1 alpine locomotion policies in Isaac Lab.
- Trained 29-DoF recurrent policies across 4,096 parallel environments and 3×10^8 transitions, with MuJoCo as an independent 50 Hz validation gate.

Qwen3VL Deepstack Optimization

Inspirit AI

July 2025 - May 2026

- Showed that 50–85% of a vision-language model's injected visual tokens can be pruned at under 2% accuracy loss: 15% kept on General VQA for –0.2%, 30% on TextVQA for –0.3%, 50% on DocVQA for +0.2%.
- Located the redundancy by pruning each DeepStack group under competing scoring methods and measuring each one's contribution to accuracy loss, finding feature-based selection robust where attention-based scoring decays to random under aggressive pruning.
- Established on held-out data (n=300/task, bootstrap 95% CIs) that depth-aware per-group token budgeting provides no meaningful gain over uniform allocation, suggesting substantial redundancy across depth groups and that uniform pruning with a feature-based scorer is near-optimal.

SKILLS

Languages & Frameworks: Python, Java, PyTorch, OpenCV, Open3D, ByteTrack

Simulators & Specializations: Isaac Sim, Isaac Lab, MuJoCo, ROS, Unitree G1, Agibot A3, Reinforcement Learning, Whole-Body Control