Sanjay Pokkali

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Education

- **University of Illinois - Urbana-Champaign** — Urbana-Champaign, USA
  Master of Computer Science; GPA: 3.8/4.0 — *Aug 2024 – Present*
  Coursework: Robot Manipulation, Principles of Safe Autonomy, Autonomous Vehicle System Eng., Computer Vision

- **SSN College of Engineering, Anna University** — Chennai, India
  Bachelor of Engineering in Computer Science and Engineering; GPA: 8.10/10.0 — *Aug. 2017 – July 2021*

Experience

- **Slip Robotics** — Atlanta, USA
  Robotics Intern — *May 2025 – Aug 2025*
  - Developed a Gazebo Ignition Simulator for the SlipBot and UR20 arm for manipulation tasks.
  - Explored using MoveIt2 and ROS2 for controlling the UR20 arm.
  - Developed action recording capabilities for the SlipBot controller.

- **RoboPIL Lab** — Urbana-Champaign, USA
  Graduate Student Researcher — *Jan 2025 – Present*
  - **Real2Sim Pipeline for Evaluating Robot Policies**:
    - Explored evaluation of robotics policies through Real2Sim using 3D Gaussian Splatting and MuJoCo.
    - Configured the Aloha Robot and developed scripts for data collection, policy training, and evaluation.
    - Aligned point clouds between Gaussian Splat, and MuJoCo to create a realistic simulation environment.
  - **Physics-Guided Residual Dynamics for Deformable Object Simulation (Paper In Review)**:
    - Developing a new method for simulating deformable objects in robotics using a physics backbone and neural network.

- **Cleo Communications** — Bengaluru, India
  Software Engineer 1 - API Team — *Aug 2021 – June 2024*
  - **Enhancing Partner Screen *[NodeJS, Angular, AWS: Lambda, RDS]***:
    - Led the enhancement of the current Partner UI to provide enhanced functionality and improved the performance of the backend API by approximately 150%.
  - **Kong Infrastructure Upgrade *[Ansible, Kong, AWS: AMI, EC2, RDS, Route53]***:
    - Performed a major upgrade of Kong Gateway with 0 downtime by using Ansible to interface with AWS and modify components.

Projects

- **GEM Smart Summon and Obstacle Avoidance *[Python, ROS]***: Developed an end-to-end pipeline to equip the GEM e2 vehicle with autonomous lane following and navigation capabilities to reach a user's GNSS location.
- **Semantic Visual SLAM *[Python]***: Built a Visual SLAM system that merges map data with labeled objects, providing autonomous vehicles with semantic maps for advanced navigation and scene understanding.

Programming Skills

- **Languages**: Python, C, C++, SQL, Java, JavaScript, TypeScript, HTML, CSS, Ansible
- **Frameworks and Technologies**: PyTorch, ROS, ROS2, Numpy, Pandas, NodeJS, Kubernetes, Git, AWS

Achievements

- **Winner, Most Innovative Solana Application Award, HackIllinois**: Mar 2025