

# KUNAL ANEJA

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## Education

**Georgia Institute of Technology** **Aug 2025 - May 2026**  
**Master of Science** in Machine Learning (Robotics) *GPA: 4.0*

Coursework: Deep Reinforcement Learning | Vision-Language Models | Formal Methods of Reinforcement Learning

**Georgia Institute of Technology** **Aug 2022 - Aug 2025**  
**Bachelors** in Computer Science *Major GPA: 4.0*

Coursework: Deep Learning | Computer Vision | Machine Learning | Dean's List 2022 - 2025

Best paper Award - Deep Learning (300 students) [Publication link](#)

## Work Experience

**Robotics Research Engineer - Prof Animesh Garg** **Feb 2023 – Present**  
*PAIR: People, AI, and Robotics Lab* *Atlanta, GA*

- Researched dexterous manipulation and sim-to-real policy learning with a focus on long-horizon control.
- Studied the integration of VLMs and VLAs in diverse environments
- Contributed to papers and open-source releases.

**Software Development Engineer Intern** **May 2024 – Aug 2024**  
*AWS: Amazon Web Services – Glue Data Catalog & Lake Formation* *Seattle, WA*

- Reduced metadata lookup latency by **15%** by redesigning caching path for partition keys in **C++**.
- Implemented encryption-defaults workflow adopted service-wide for new Lake Formation tables.

**Student Researcher - Prof Charlie Kemp** **Oct 2022 – May 2023**  
*HRL: Healthcare Robotics Lab* *Atlanta, GA*

- Explored vision-based approaches for hand-object interaction and tactile estimation using camera data.

## Publications

**I2G2RO: Image to Grasp to Reorient** ([website](#)) **ICRA 2026\***  
*Kunal Aneja, ..., Animesh Garg*

- Led development of training a vision-based policy via behavior cloning and reinforcement learning.
- Integrated NVIDIA Isaac Lab simulation to generate scenarios optimized in CUDA and **C++**
- Achieved a 42% improvement in final object pose accuracy over SOTA.

**AMPLIFY: Actionless Motion Priors for Robot Learning from Videos** ([website](#)) **CoRL 2025\***  
*Jeremy Collins, Loránd Cheng, **Kunal Aneja**, Albert Wilcox, Benjamin Joffe, Animesh Garg*

- Wrote a policy to encode visual dynamics into compact, discrete motion tokens from keypoint trajectories
- Sole contributor for engineering and implementing models in **C**.
- Decoupling the challenges of learning **what** motion defines a task from **how** robots can perform it

**FLASH: Flow-Based Language-Annotated Grasp Synthesis for Dexterous Hands** **CoRL 2025**  
*Hrishit Leen, Jeremy Collins, **Kunal Aneja**, Chetan Reddy, Nhi Nguyen, ..., Animesh Garg*

- Proposed first grasp generator using conditional flow-matching over live hand and object point clouds.
- Built the conditional flow-matching backend in **C++** to accelerate grasp synthesis by 40%

**A Survey of Grasping for Dexterous Robot Hands** ([website](#)) **Advanced Robotics Journal 2025**  
*Hrishit Leen\*, **Kunal Aneja\***, ..., Animesh Garg*

- Reviewed 280+ publications across datasets, synthesis, and execution for multi-finger grasping.
- Proposed unified taxonomy of nine grasp-quality metrics and released interactive benchmark framework.

**PressureVision++: Fingertip Pressure from RGB Images** [arXiv](#) **WACV 2024**  
*Patrick Grady, Jeremy Collins, ..., **Kunal Aneja**, James Hayes, Charles C. Kemp*

- Created a deep learning model to estimate fingertip pressure using only RGB images, w/o sensors.
- Proposed a novel approach enabling diverse data capture with only an RGB camera and a participant.

## Technical Skills

**Programming Languages:** C/C++, Python, CUDA, Java, SQL, JavaScript, Go

**Machine Learning:** Reinforcement Learning, Behavior Cloning, Transformers, CV, Sim-to-Real, IL

**Robotics:** Vision-Language Action Models, World Models, Manipulation

**Frameworks and Tools:** ROS, TensorFlow, PyTorch, OpenCV, AWS, GCP, Linux, PyBullet

**Simulators and Robots:** IsaacLab, MuJoCo, Isaac Gym, Franka, **Allegro Hand**, LEAP Hand