

## ISHIKAA LUNAWAT

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### EDUCATION

<b>Stanford University</b>	<b>Sep '23 - Present (Expected Mar '25)</b>
MS Electrical Engineering	CGPA: 3.9/4.0
Coursework: 3D Computer Vision and Reconstruction, Virtual Reality (AR/VR), Artificial Intelligence, Machine Learning	
<b>National Institute of Technology Tiruchirappalli</b>	<b>Jul '19 - May '23</b>
B.Tech. Electrical Engineering	CGPA: 9.5/10.0
Coursework: Machine Learning and Deep Learning, Industrial Automation, Modern Control Systems	

### TECHNICAL SKILLS

**Programming Languages:** Python, C/C++, JavaScript  
**Tools & Frameworks:** PyTorch, OpenCV, Pybullet, Open3D, Trimesh, SciPy, Gazebo, Scikit Learn, OpenGL  
**Software:** MATLAB, Visual Studio Code, Git, Anaconda, ROS2, ROS

### RELEVANT EXPERIENCE

<b>VPG Systems Intern</b>   Apple Inc. Sunnyvale, CA	<b>Jun '24 - Present</b>
<ul style="list-style-type: none"><li>Analyzed state-of-the literature for <b>intrinsic</b> and <b>extrinsic calibration</b> of 3D <b>optical coherence tomography</b> system</li><li>Designed end-to-end software/hardware integration pipeline for <b>pose estimation</b>, tracking and point cloud processing</li><li>Developed geometric algorithms using <b>differentiable optical ray tracing</b> with end-to-end uncertainty in the <b>sub-mm</b> range</li><li>Selected to present internship work to <b>VPG leadership</b>, as one of only 6 interns from a pool of 30-40 across sub-teams</li></ul>	
<b>Machine Learning Intern</b>   Omnyk Inc. San Jose, CA (remote)	<b>Aug '22 - Mar '23</b>
<ul style="list-style-type: none"><li>Reviewed <b>5+</b> papers to correlate EEG/ECG data with heart health for sleep-stage classification using <b>LSTM/RNNs</b></li><li>Devised a novel deep learning architecture <b>squeeze &amp; excite blocks</b> improving sleep classification accuracy by <b>10%</b></li></ul>	
<b>3D Perception for Robotics Researcher</b>   Intelligent Autonomous System Laboratory TU Darmstadt, Germany	<b>May '22 - Jul '23</b>
<ul style="list-style-type: none"><li>Developed a novel semi-implicit NeRF-style <b>neural surface rendering</b> network to learn <b>3D scene representation</b> with TSDF</li><li>Conducted method evaluation through Pybullet simulations achieving average <b>6-DoF grasp</b> test success rate of <b>86%</b></li><li>Performed <b>real-robot</b> experiments on the TIAGo robot with <b>ZED2 depth</b> camera with a high success rate of <b>~ 90%</b></li></ul>	
<b>Computer Vision Intern</b>   Pattern Recognition Laboratory IIT BHU, India	<b>May '21 - Jul '21</b>
<ul style="list-style-type: none"><li>Examined state-of-the-art literature and implemented <b>3+</b> methods to understand of effect of image <b>static occlusions</b></li><li>Designed a novel <b>spatio-temporal</b> model for inpainting occluded frames using <b>3D CNN</b> models and embedding layers</li><li>Enhanced person classification accuracy by <b>20%</b> through <b>key-pose embedding</b> surpassing frame averaging methods</li></ul>	

### PROJECTS

<b>Multi-View 3D Reconstruction using Knowledge Distillation</b>   Manpreet Kaur (Apple)	<b>Apr '24 - Jun '24</b>
<ul style="list-style-type: none"><li>Engineered a knowledge-distillation pipeline using <b>Vision Transformers</b> for <b>3D reconstruction</b> from foundation models</li><li>Optimized and performed hyper-parameter tuning on small student model leading to a <b>40x reduction</b> in <b>model size</b></li><li>Implemented scripts for training &amp; evaluation using L2 loss and visualization comparing <b>3+</b> architectures on Tensorboard</li></ul>	

### PUBLICATIONS

Georgia Chalvatzaki, Ishikaa Lunawat et al. (2024)   Learning Any-View 6-DoF Robotic Grasping in Cluttered Scenes	<a href="#">Link</a>
Chelsea Finn, Ishikaa Lunawat et al. (2024)   Evaluating Real-World Robot Manipulation Policies in Simulation	<a href="#">Link</a>
Ishikaa Lunawat et al. (2022)   SIHeDA-Net: Sensor Fusion Heterogeneous Domain Adaptation Network	<a href="#">Link</a>