

CHRISANTUS EZE

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EDUCATION

Oklahoma State University (OSU) | Ph.D., Computer Science (in-view) [January 2022 - In progress]

- **Research: AI & Robotics:** long-horizon planning, spatial reasoning, foundation models (LLMs and VLMs), computer vision.
- **Tools:** Pytorch, Tensorflow/Keras, C/C++, ROS, Pybullet, MuJoCo, Scikit-Learn, Numpy, Pandas, SQL, Docker, Python, Java

Federal University of Technology, Owerri (FUTO), Nigeria | B.Eng. in Electrical & Electronic Eng October 2013 - October 2018

PUBLICATIONS

- **Chrisantus Eze**, Ryan Julian, and Christopher Crick. Learning Object-Centric Spatial Reasoning for Sequential Manipulation in Cluttered Environments. [Under review]
- **Chrisantus Eze** and Christopher Crick. Learning by Watching: A Review of Video-based Learning Approaches for Robot Manipulation [Under-review]
- Uzoamaka Ezeakunne, **Chrisantus Eze**, and Xiuwen Liu. Data-Driven Fairness Generalization for Deepfake Detection. Proceedings of the 17th International Conference on Agents and Artificial Intelligence (ICAART). 2025.
- **Chrisantus Eze** and Christopher Crick. A3: Active Adversarial Alignment for Source-Free Domain Adaptation. IEEE International Conference on Machine Learning and Applications (ICMLA), 2024.
- **Chrisantus Eze** and Christopher Crick. Enhancing human-robot collaboration by exploring intuitive augmented reality design representations. Proceedings of the 18th ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2023

RELEVANT EXPERIENCE

Graduate Researcher - AI & Robotics | **Department of Computer Science, OSU** January 2022 - Present

- Conduct research on long-horizon manipulation, spatial reasoning, foundation models (LLMs/VLMs), and multimodal perception for robotic systems.
- Designed **Unveiler**, a two-module system (planning + control) enabling robots to reason about occlusions and sequentially remove objects to access hidden targets in cluttered scenes.
- Developed and fine-tuned **foundation models for manipulation** by integrating vision-language representations with retrieval-augmented generation (RAG) pipelines, improving recognition, grounding, and action planning in unstructured environments.
- Created **domain adaptation frameworks** for robotics using source-free adversarial alignment to adapt pretrained policies to novel environments without target labels.
- Led simulation-to-real transfer experiments using MuJoCo and PyBullet for manipulation with DOFBOT Pro and UR5 robots, validating methods across 3D vision inputs and reinforcement learning controllers.

Engineering Intern – Advanced Process Control | **Fractionation Research Inc.** June 2025 - August 2025

- Built a real-time anomaly detection system for distributed control systems (DCS), combining signal processing and machine learning to detect steady-state conditions and reduce process downtime.

Graduate Student Mentee – AI & Robotics | **Google** February 2023 - June 2025

- Collaborated with a Senior Robotics Scientist at Google on robotic retrieval in cluttered environments, applying behavior cloning and visual reasoning to train sequential manipulation policies.
- Co-authored a paper on object-centric spatial reasoning for robotic manipulation, integrating perception and planning in environments with high object density.

NON-RESEARCH PROJECTS

Clutter-Bot: Multi-Agent Manipulation

- Built a pipeline linking **VLM** segmentation, GPT-4o planning, and RL controllers for **long-horizon** object retrieval in clutter.
- Deployed on UR5 robot and PyBullet sim, showing language-guided sequential manipulation with foundation models.

Lab-Mate: Research Assistant Bot

- Created a **LangChain Slack bot** that summarizes daily lab discussions with GPT-4o and extracts action items.
- Reduced coordination overhead and demonstrated LLM use in collaborative research workflows.