# HARISH KUMAR KALIYAPPAN

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## SUMMARY

Graduate student specializing in Autonomous Systems with a strong foundation in Computer Science, Artificial Intelligence, and Robotics. Proven experience in IoT and automation through practical projects and internships. Highly skilled in developing innovative solutions to complex problems. Passionate about utilizing AI and robotics expertise to address and solve real-world challenges on a global scale.

## EDUCATION

Illinois Institute of Technology, Chicago, IL, United States of America MAY 2026
**Master of Science, Autonomous systems and Robotics**
**Course work:** Engineering Analysis I, Modern control systems and Robotics

Vellore institute of Technology, Chennai, India MAY 2020 - APRIL 2024
**Bachelor of Technology, Computer Science specialization in Artificial Intelligence and Robotics** **GPA** 3.1
**Course work:** Foundations of Robotics: kinematics, Dynamics and motion control, IOT Fundamentals, IOT Domain analyst, Simulation and Modeling, Machine Learning and its Applications, Deep learning: Principles and Practices, Fundamentals of Artificial Intelligence and Speech and Language Processing

## SKILLS

- **TECHNOLOGY**: AutoDesk Fusion | OpenCV |Tensorflow | ROS 1&2 | Arduino | Raspberry Pi
- **OTHER**: Proficient in MS Office suite | Strong problem-solving and analytical skills | Excellent communication and teamwork abilities
- **LANGUAGES**: C | C++ | Python | R | Java | MATLAB | CSS| JavaScript | HTML

## INTERNSHIP EXPERIENCE

Artificial Intelligence Analyst Intern at IBM MAY 2023 – JUNE 2023

The internship aimed to provide comprehensive knowledge and skills in Artificial Intelligence and its applications, covering a broad range of AI-related topics with practical tool usage.

## PROJECT EXPERIENCE

**Collaborative robot acting as scrub nurse for cataract surgery (CRASCS)** DEC 2023 – APRIL 2024
Published in: Journal of Robotic surgery, Springer Link

Official Journal Link: https://link.springer.com/article/10.1007/s11701-024-02089-0
National Institute of Health page Link: https://pubmed.ncbi.nlm.nih.gov/39261441/

Customized Collaborative autonomous 5 DOF robot is built to assist in cataract surgery by identify surgical phases and surgical tools respectively and placing them appropriately in surgical tray in real time. This system is also combined with voice command model to assist surgeon's in-between cataract surgery phases.

**Real-time soil moisture prediction for building construction** APRIL 2023 – MAY 2023
Conference: International Virtual Conference on Intelligent Robotics, Mechatronics, and Automation Systems (IRMAS 2023)

Multiple sensors has been used assess soil conditions at construction sites. Through continuous monitoring and leveraging a deep learning model, the system predicts the time required for soil to attain the desired moisture level. This predictive capability facilitates the establishment of a robust foundation for building construction.