

AKASH AJIN THOMAS

Toronto, ON

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Education

University of Toronto (St. George Campus)

Sep. 2024 – May 2029

Bachelor of Applied Science in Engineering Science (PEY Co-op), Minor in Artificial Intelligence

Toronto, ON

Experience

University of Toronto Robotics Association Combat Team (UTRA Combat)

Sep 2025 – Present

Student Engineer

Toronto, ON

- Redesign “Agent P,” a 30 lb combat robot, for sumo competition.
- Rebuild the robot’s control and power circuits, integrating motor drivers, sensors, and electronic speed controllers (ESCs).
- Redesigned Agent P’s chassis and weapon assembly to improve balance, center of gravity, and modularity within the 30 lb weight limit.

STER-IOT

Jul 2026 – Aug 2026

Software Engineering Intern

Dubai, UAE

- Developed a Python and SQL program to retrieve meter information for IoT engineers.
- Collected on-site data and compiled reports, checking data accuracy.

Three Comma Capital

Jun 2025 – Aug 2025

Compliance Intern

Dubai, UAE

- Supported the review of anti-money laundering policies and procedures against Dubai Financial Services Authority requirements.
- Collaborated on a website audit and redesign to update company information and improve the user interface.

Projects

Gesture-Controlled Car | *Arduino, Raspberry Pi Pico, MPU6050, NRF24L01, C++*

Oct 2025

- Built a gesture-controlled robotic car using an MPU6050 gyroscope and accelerometer.
- Programmed Arduino microcontrollers to process real-time IMU data and transmit directional commands through NRF24L01 transceivers.
- Integrated motor drivers to control forward, reverse, and turning motion based on wrist orientation.
- Integrated a mounted camera with facial recognition software.

Attitude Control for Quadcopters | *PID controller, Python, Non-linear ODE modelling*

Sep 2025 – Dec 2025

- Model quadcopter flight dynamics using coupled nonlinear ordinary differential equations.
- Design and simulate a PID controller to stabilize hover and reject external disturbances.

Fire Weather Monitoring System | *Sensors, Radio Communications, Data Filtering*

Jan 2026 – Apr 2026

- Designed a monitoring system to collect environmental sensor data for fire-weather analysis.
- Implemented radio communication to transmit sensor readings between the monitoring unit and receiver.
- Applied data filtering techniques to process sensor readings and generate a Fire Probability Index.

6-DOF Aluminum Robotic Arm | *Arduino Uno, Robotics, Computer Vision*

Feb 2026 – Present

- Built a six-degree-of-freedom robotic arm using an aluminum structure and an Arduino Uno controller.
- Currently implementing a camera system and training the arm to autonomously pick up and move objects.

Digital Wardrobe | *Web Development, Machine Learning, Computer Vision*

Aug 2026 – Present

- Built a website that lets users organize a digital wardrobe and customize outfits.
- Trained a machine learning model on an outfit dataset to identify compatible clothing combinations for outfit recommendations.
- Trained the model to recognize individual clothing items in images for use in the digital wardrobe.

BracketBot Simulation | *Python, MuJoCo, Computer Vision, WebXR*

Sep 2026

- Developed three-camera navigation with obstacle detection and Dijkstra path planning; built a learned map saved between runs for room localization and route reuse.
- Implemented wheelchair grasping and towing with inverse kinematics, plus Quest VR teleoperation with head-camera streaming, arm and gripper controls, joystick driving, and headset steering.

Solar-Powered Car | *Chassis Design, Drivetrain Mechanics, Circuit Design*

Jun 2023

- Designed a solar-powered car with a custom chassis and drivetrain for a competition at De Montfort University, Dubai.
- Placed among the top 5 of 35 teams.

Technical Skills

Programming: Python, C/C++, SQL (MySQL), MATLAB, SystemVerilog, HTML/CSS, RISC-V
Hardware & Electronics: Arduino, Raspberry Pi, Raspberry Pi Pico, sensors, radio and Bluetooth communications, LTspice
Design & Fabrication: Onshape, Blender, 3D printing, lathe, mill, drill press, machine shop safety
Controls & Machine Learning: PID control, nonlinear modelling, model training, computer vision, OpenCV, PyTorch, ROS2

Honors

UofT Engineering Dean’s List	Winter 2025
	<i>University of Toronto</i>
UofT Engineering Dean’s List	Fall 2024
	<i>University of Toronto</i>

Leadership Experience

Headboy, (Student Council Lead)	Apr 2023- Mar 2024
<i>JSS private school, Dubai</i>	