

AKSHIT MANIKANTA ERUKULLA

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EDUCATION & CERTIFICATIONS

Merivale High School, Ottawa, ON. - This year: 95% Avg.

GRADUATING YEAR: 2027

- Part of the International Baccalaureate (IB) Program. Achieved *Honour Roll, Silver Medal*.
- Top subjects include Mathematics (97%), Science (94%), Technology (95%), Computer Science (100%)
- *Member of the Computer Science Club, Robotics Club, Model UN Club, Chemistry Club*
- Chapter President/Creator of the *Merivale Business Club* (Ottawa ACES Chapter)

SKILLS

- **Main Coding Languages:** Python, Arduino C, HTML, CSS, JS, and currently learning Java
- **Experience** in AI/ML, Arduino, Game Development, Web Development, Data Analytics
- **Soft Skills:** Leadership, Time Management, Communication, Debugging, Analytical skills

AWARDS & ACCOMPLISHMENTS

- Hack 49 Hackathon 3rd Place Winner using Surge Stitch Project (2024)
- GIA Hacks 2 Hackathon 4th Place Winner using EduPiano Project (2024)
- Ontario Silver Medal for Exemplary Academic Display of Achieving a +90% Average (2024)
- Ottawa Regional Science Fair Curiosity & Ingenuity Category Winner (2024)
- Fryer UWaterloo Competition National Rank 104 (2024)
- Canadian Computing Competition Junior Distinction (2024)
- Canadian Intermediate Mathematics Canada UWaterloo National Rank 142 (2023)
- Ottawa Regional Science Fair ASHRAE Special Award Winner (2023)
- Obotz Olympiad National 1st Rank (2020)
- Graduated all 7 levels of Obotz Barrhaven Robotics with *Honour Roll* and as *Competition Winner*
- Earned Drone license; C (Intermediate), Python (Intermediate), JavaScript (Intermediate) certificates

VOLUNTEER & WORK EXPERIENCE

Founder & President, Ottawa ACES Business Chapter

August 2024 - PRESENT

- Increased social media presence by regularly updating Instagram and posting. Set up events & lessons.
- Brought in guest speakers & teachers. Working on bringing sponsors and developing a startup business.

Reference: ACES | advancedcurriculums.official@gmail.com

Web developer, Fresh Future Foundation

August 2024 - PRESENT

- Leveraged React.js, Node.js, HTML, and CSS, to revamp the frontend of organization's website
- Increased social media presence by regularly updating Instagram and posting. Made connections.
- Set up events and ideas for the organization. From hackathons to coding/robotics projects.

Reference: Arya Vaidhya | aryav663@gmail.com

Engineer, Sparkling H2O Youth Robotics

July 2024 - PRESENT

- Part of the software team. Used Java to develop subsystems and commands to control the FIRST competition robots. Participated in competitions for testing and calibrating robots.
- Worked with the mechanical and outreach team to develop strategies, plan, and build the robot

Reference: Spark Youth Robotics Club | spark.youthrc@gmail.com

Embedded C & Arduino Assistant Teacher, OBotz Robotics

June 2023 - March 2024

- Lead lessons at OBotz Robotics, teaching students about microcontrollers, mechanical and electronic components, Arduino programming, and embedded C through interactive methods
- Incorporated real-world examples and hands-on projects into the curriculum, enabling students to apply theoretical knowledge to practical tasks and problem-solving scenarios

Reference: Cyrilkumar Jithuri | cyril@ucmasottawa.ca | (613) 404-5572

PROJECTS

MediSuit | An Advanced Medical Suit Leveraging Non-Invasive Ultrasound Technology and Biochemical Sensing for Predictive Disease and Injury Detection + Targeted Drug Delivery Mechanisms - PRESENT

- Utilizes AI and machine learning, including CNNs, for high-accuracy ultrasound data analysis (98%).
- Analyzes extensive datasets to recommend optimal treatments for injuries and diseases.
- Features an autonomous medicine pack and micro-seams for precise, localized medication transport.

Surge Stitch October 2024

- Created a medical stitching robot by utilizing computer vision (Python) and Embedded C
- Developed a new stitching method through 3D simulations and CAD modelling
- Generated different prototype models and demonstrated a working example to an audience

Traffic Analyzer & Carjacking Camera September 2024

- Utilized TensorFlow and video framing modules to analyze traffic videos. Identified traffic hotspots, and root causes of traffic based on detailed and lengthy input videos.
- Given a dataset of stolen vehicles or a specific car, tracks & predicts vehicle's movements through surveillance cameras and driving pattern analysis in cases of theft. Leveraged Googlemaps API

EduPiano August 2024

- Leveraged Python and complex algorithms to calculate the most comfortable finger positions of a piano music song from sheet music. Developed a 2D piano and friendly UI using Pygame.
- Designed an IRL projection piano prototype and a posture corrector to teach users step by step.

Exoplanet Habitability Predictor February 2024

- Analyzed trends & correlations in the NASA Exoplanet Archive using Python Matplotlib library.
- Developed a novel method for calculating the relative habitability of exoplanets based on planetary and stellar characteristics using Python, Pandas, NumPy, and SciPy.
- Visualized data through an interactive public website application featuring simulations and an interactive front-end, utilizing JavaScript, HTML, and CSS.
- Implemented techniques like memoization to enhance user experience by reducing wait times and improving computational speed.

BasFinance: The Easy to use Financial Knowledge Teacher February 2024

- Developed a suite of Python scripts capable of currency conversion, investment and loan tracking, stock market simulation, and displaying moving averages of stocks using math libraries.
- Transformed these applications into a modern finance website designed to educate users about various financial concepts and tools.

TriGames December 2022

- Designed and developed multiple games using Pygame, C#, and JavaScript, showcasing proficiency in class-object-oriented programming, error handling, and server control.
- Leveraged web development languages like JavaScript, HTML, and CSS to ensure seamless game accessibility without interruptions.
- Demonstrated expertise in 3D modelling to enhance the gaming experience for specific projects.

Autonomous Stair Climbing Wheelchair June 2020

- Led an embedded C project focused on designing and implementing an autonomous stair-climbing wheelchair equipped with sensors.
- Developed the wheelchair's fully autonomous feature capable of following pre-inputted routes while avoiding obstacles and ensuring user safety.
- Designed a futuristic, protective, and ergonomic wheelchair to provide support and assistance during emergencies, including built-in mechanisms for contacting health support.