Ian Wright

Joppa MD | iwright1@umbc.edu | LinkedIn| Website

EDUCATION

University of Maryland, Baltimore County (UMBC) Baltimore, MD | Aug 2023 – May 2027

Bachelor of Science in Mechanical Engineering with a Minor in Mathematics with a GPA of 3.3/4.0

Fallston High School (FHS) **Fallston, MD | Fall 2019 – May 2023**

- Relevant Course: AP Comp Sci, Design, AP World
- Weighted GPA: 4.25/4.0

Skills

- **Technical**: MATLAB, reverse engineering, CAD, Python, Soldering, Machining, Arduino, Rasberry PI
- **Software Tool**: Google suite, Microsoft Office 365, Excel, Word, Fusion 360, SolidWorks
- **Related Coursework**: Differential Equations, Intro to Circuits, Advance MATLAB, Fluid Dynamics, Solids and Materials Lab, Intro to Machine Design
- **Certifications**: SOLIDWORKS CAD Design Associate (CSWA)

PROJECTS

Arduino/Raspberry Pi Light Control | UMBC Joppa, MD | Jan 2026

- learned how to control LED lights with an Arduino and Raspberry PI
- For Arduino I created a flashing RGB light sequence which can be turned on and off with a button and the speed of the sequence can be controlled with a potentiometer and displayed on an LCD display. All coded in C++
- For the Rasbery PI I controlled a light sequence and counted the number of times the sequence went through on a 7-segment display

Analyzing Buckling and Compressive Failure of 3D Specimens | UMBC Baltimore, MD | Fall 2025

- Collaborated with a team of four to design and execute an experiment in testing different failures for 3D printed Pla specimens to determine whether it will compress or buckle.
- Tested 3D printed Polylactic Acid (PLA) specimens at 10%, 25%, 50% and 100% infill with 2 different lengths of 77.5 mm, and 125mm at each infill and 3 specimens per each length at the different infills.
- Wrote a lab handout and lab report consisting of over 20 pages and determined that at lower infills the specimens experienced compressive behavior and at higher infills the specimens experienced buckled behavior

MATLAB Auto-Regressive Model of a Mass Spring System | UMBC Baltimore, MD | Fall 2025

- Created an Auto-regressive model that provided the current value of a time series as a linear combination of its past values from provided data.
- Used techniques to solve differential equations of a mass spring system in the form of Ax=b with the help of MATLAB.
- Successfully simulated two different datasets with an error as low as 6.2e-8 and presented findings in a technical report lasting over 10 pages.

Lift Platform Challenge | UMBC Baltimore, MD | Fall 2025

- Collaborated with a team of four to design and create an 8”x 8” x 8” device capable of lifting a 3.1lb weight 4” above its original height.
- Performed proper analysis of stresses, deflection, failure, and tolerance fitting to design the drive train for a scissor lift to fill the proper requirements. Also created functional CAD models in SOLIDWORKS to rapidly protype shafts and the housing for the gear train. Also Soldered secure connections and wiring connecting a DPDT switch with a Brushless DC motor.
- Demonstrated the functionality of the lifting device in front of over 80 fellow engineers and created multiple technical reports over 10 pages to document and maintain the design history of the device.

Monitoring Health Symptoms and Displaying on a Computer | Howard University Washington, DC | Summer 2025

- Collaborated with a team of 3 to design and create an app that can easily read and monitor health systems at a hackathon
- I learned how to create a backend server in Python that can connect one’s apple watch with an app created in Flutter
- We presented to many companies and sponsors of the event

Project AdaptAble | UMBC Baltimore, MD | Spring 2025

- Designed a toy for recreational use by children with limited mobility in their hands and color-blindness.
- Used a “toy robot” concept in our design to increase user engagement and enjoyment designed, by utilizing a combination of 3D printed and commercial parts to ensure safe rotational action (hips, shoulders) as well as mechanical and magnetic attachment points, while designing for parts to be removed and replaced.

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- Participated in an open forum presentation and question and answer session for our design while producing technological reports lasting over 20 pages.

MATLAB Euler Simulation | UMBC Baltimore, MD | Fall 2024

- Tasked to create implementation of the Eulers equation in MATLAB
- Used different languages including the plot command and creating different functions

UMBC Robotics on the Surface (UROS) | UMBC Baltimore, MD | Fall 2023

- Collaborated with a team to create a robot that will go through a course, retrieve objects (ping pong balls) and return them to pre-determined coordinates.
- Programmed controls through Robot C, overcoming design challenges and maximizing route efficiency within budgetary constraints collecting over 400 points.
- Presented challenges and mechanisms our team used to overcome them to university robotics leaders.

Junior Solar Sprint Racing (JSS) | Aberdeen Aberdeen, MD | 2018-2020

- Tasked to create a car that is only powered by solar power
- Made the car through Balsa wood due to the lightness and durability
- Placed 10th in a national competition at Nashville, Tennessee

WORK EXPERIENCE

Estimated Control, and Learning Lab (ECLL) at UMBC| Research Assistant Baltimore, MD | April 2025 –Present

- Worked on creating and developing an inverted reaction wheel pendulum utilizing different controls techniques.
- Performed dynamic calculations to calculate the required torque to apply to the reaction wheel to invert a pendulum. Developed a functional CAD assembly in SOLIDWORKS.
- Created weekly reports to showcase progress and continuously updated Bill of Materials with new materials required for the project

AEOP Internship and Fellowship | Test Engineer Intern Edgewood, MD | Summer, 2025

- Worked within a multidisciplinary team comprised of government and industry stakeholders to manage the development and testing of decontamination technologies for the Defense acquisition sector.
- Created online spaces for over 100 stakeholders to influence collaboration of document storage, editing, publication and event scheduling using the Microsoft Teams and SharePoint platforms.
- Developed and designed a safe and interactive test plan over 5 pages long, simulating the use of a barrier material for fixed-site remediation using current military technologies.
- Presented an audiovisual overview of my accomplishments to the director's level of agency leadership.

UAS Research and Operations Center (UROC) | R&D Engineer Intern California, MD | Summer, 2024

- Developed, implemented and successfully demonstrated a net gun system for a "defender" drone to neutralize an "attacker" drone as a form of counter UAV.
- Designed the net gun solution using Fusion 360 and sourced components to maximize the use of common industry standards while also simulating a capture rate of 90%.
- Also assembled drones and applied soldering techniques while gaining awareness of NAVAIR programs and initiatives such as the ARTEMIS program.
- Provided in-process reporting of project status through quad charts and verbal presentations.

Aquaculture Swim School | Swim Instructor/ Lifeguard Forrest Hill, MD | Winter 2019-July 2023

- Instructed students from age 3-14 on the fundamentals of swimming
- Managed other swimming instructors and taught them the basics of the facility
- Lifeguarded 2 different pools and was not required to save anyone for 2 years straight

Extra-Curricular Activities

- American Society of Professional Engineers (Member)
- AIAA (Member)
    - Designed and assembled a fixed wing out of Styrofoam to fit for one of the drones.
    - Soldered the electrical circuit and applied heat shrink wraps for safe assembly
    - Designed a way of storing "passengers" in our plane to transport from point A to point B without disrupting the weight.
- Chewmbc (Member)