# Daria Kot

dak267@cornell.edu ● Portfolio: https://daria-kot.github.io/

## Education

**Cornell University, College of Engineering**                                          Ithaca, NY
*Masters of Engineering in Mechanical Engineering*                          *August 2025 - May 2026*
*Bachelor of Science in Computer Science, Minor in Robotics*            *August 2021 - May 2025*

**Current Courses:** *Designing with Microcontrollers, Spacecraft Technology & Systems*
**Completed Coursework:** *Algorithms, Operating Systems, Computer System Organization, Artificial Intelligence, Practicum in AI, Machine Learning, Data Structures & Functional Programming, Object Oriented Prog & Data Struc, Statistics, Multivariable Calculus, Foundations Robotics, Fast Robots, Mechatronics, Data Science, Integrated Sensors and Actuators*

**Northern Virginia Community College 2021'**                                    Manassas, VA
*Associates of Science in Information Technology, Summa Cum Laude*        *August 2019 - June 2021*
*Career Studies Certificate: Database Specialist*

**Battlefield High School 2021'**                                              Haymarket, VA
*Center for Applied Science, Interactive and Information Technology*        *August 2017 - June 2021*

## Technical Skills

- **Programming Languages:** C++, Python, C, Java, OCaml, Java SWING & HTML/CSS
- **Developer Tools:** Git, GitHub, VS Code, Eclipse, SVN, IntelliJ, SolidWorks (CAD), ROS (Robot Operating System)
- **Hardware and Electronics:**
  - Microcontrollers: Arduino, Raspberry Pi, Artemis
  - Sensors: IMU, Altimeter, GPS, SD Card reader, ADC, DAC, TOF
  - Actuators: Servo motors, Stepper motors
  - Circuit Design: Altium (PCB layout)
- **Control Systems:**
  - Closed-Loop Control Systems (PID)
- **Machining & Fabrication:** 3D Printing, Laser Cutting, Lathe, and Mill
- **Programming Paradigms** Functional Programming, Object-Oriented Programming

## Work Experience

**Telos Health**                                                           Campbell, CA
*Systems Engineering Intern*                                      *June 2025 – August 2025*

- Designed and manufactured a latency characterization device for robotic systems, reducing measurement uncertainty and improving reliability of results.
- Streamlined testing workflow: replacing manual video frame analysis to automated measurements (20+ measurements in minutes, latency identified in seconds, and improved accuracy).
- Programming microcontroller for real-time data acquisition and processing.
- Circuit design, fabrication, and system integration.
- Testing, verification, and iterative validation of hardware and software.

**Cornell Rocketry - Student Engineering Project Team**                       Ithaca, NY
*Recovery and Payload Sub-team Lead*                              *June 2024 – June 2025*

- Collaborating with 50 team members to design, manufacture, and test a high-powered rocket with an autonomous recovery system to compete in the Spaceport America Cup.
- Managing an 8 member sub-team by establishing system requirements, creating a yearlong schedule, and facilitating weekly meetings and work sessions to meet deadlines.
- Leading the integration of an L3 high-powered rocket, incorporating the Break Line Manipulation Systems (BLiMs), avionics bay, and dual-stage recovery to ensure reliability on the competition rocket.
- Led integration and testing that resulted in the first-ever successful flight and deployment of BLiMs in the 7+ years of its development.
- Directing design and integration of an air-sampling payload with six subsystems, including filtration and Venturi scrubber collection, coulter counter analysis enabling real-time particulate analysis, structural design, automated vent control mechanisms, electronics, and software.
- Overseeing recruitment through information sessions, applications, interviews, and onboarding new members.
- Collaborating with MechE, ECE, and Software sub-teams to integrate Recovery & Payload systems.

*Student Engineering Project Team Member*                        *October 2022 – May 2024*

- Led development of electronics and software for the Break Line Manipulation System (BLiMs), utilizing C++, Python, and microcontrollers.
  - Developed an electronic suite comprising sensors (barometric altimeter, compass, IMU), motor drivers, stepper motors, and a microcontroller.
  - Designed and implemented a closed-loop PID control system to query sensor data, process telemetry, and drive stepper motors, pulling parachute break lines to guide the rocket's descent in a predetermined cardinal direction.
- Designed, manufactured, programmed, and tested peripheral electronic systems needed for testing BLiMs, including a remote actuator, and sensor board.
  - Built and programmed a remote actuator comprising of a pair of microcontrollers and pair of radio modules. When a signal on the ground module was sent, the TX module transmitted a signal to RX module, triggering rocket section separation, enabling effective testing of parachute inflation midair.
  - Sensor board consisted of altimeter, compass, IMU, GPS, SD Card reader and microcontroller, used to collect and store telemetry data during parachute drop tests.
- Integrated electronics and tuned PID controller for a camera stabilization Payload that kept camera orientation stationary against the roll of the rocket during flight.
- Placed 2nd out of 160 teams in '22-'23 Spaceport America Competition, 1st out of 10 teams in 10k Student Research and Development Category.

**Fast Robots Teaching Staff**                                                                   Ithaca, NY
*Undergraduate TA*                                                        *December 2024 –Present*
- Provided hands-on assistance in debugging software and hardware issues, offering personalized guidance to help students troubleshoot and refine their lab projects.
- Developed and documented a step-by-step guide for students to set up and manage their own websites, enabling them to effectively showcase their projects and skills online.

**FIND Research Group - ECE Department Cornell**                                 Ithaca, NY
*Undergraduate Researcher*                                      *June 2024 – December 2024*
- Assisting Professor to develop a digital communications tool that simulates data transmission over Wi-Fi.
- Engineering electronics that interface with a server, sample, distort, and transmit .wav files.
- Programming and testing software to ensure seamless integration with electronic components.

**Progeny Systems Corporation**                                                         Manassas, VA
*Software Developer Intern*                                            *May 2022 - July 2022*
- Developed GUI testing tool which simulated power control panel of Common Weapon Launcher on submarines.
- Utilized Java Swing and Linux to build GUI and setup client server connections.
- Collaborated with 10 engineers to determine the requirements of testing tool.

**Mathnasium & Battlefield High School**                                            Bristow, VA
*Math and PL/SQL Database Tutor*                                   *June 2020 - April 2021*
- Taught approximately 50 students from various age ranges (e.g. algebra, calculus, trigonometry, etc.).
- Provided homework assistance and reinforced topics (e.g. querying, joins, partitions, views, transactions, constraints, data integrity, etc.).
- Trained 5 new tutors by explaining administrative tasks and demonstrating communication styles with students.

## Skills and Interests

Fluent in Russian, Painting, Printmaking, Drawing, Woodworking/Whittling, Rock Climbing, Boxing