

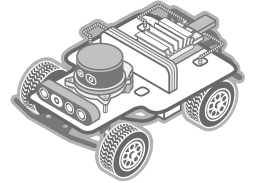
BEAVER WORKS
Lincoln Laboratory | School of Engineering



MIT Beaver Works Summer Institute

Fall 2023 Outreach Program – 6 Courses

Girls Who Program Autonomous Cars



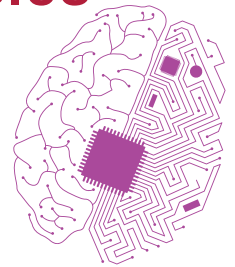
Girls Who Program Cognitive Assistants

Girls Who Want to Learn Many Interesting Things

Girls Who Design, Build and Fly Model Aircraft

Girls Who Want to Learn the Basics of ASICS

Girls Who Program Racing Drones



**No Prior
Experience
Required!**

WHO: High School 10th and 11th Grade Female Students *

WHEN: Saturdays 11am–2pm (EST) – October 14, 21, 28,
November 4, 11, 18, December 2, 9 2023

WHERE: Virtually, through Zoom!

REGISTER: https://mit-bwsi.formstack.com/forms/bwsi_fall2023

* While all BWSI programs are open to eligible students of any gender identity this fall program is designed to encourage and support female students in STEM.

 **LINCOLN LABORATORY**
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Department of Defense
DoDSTEM
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Patrick J McGovern
FOUNDATION



School of Engineering

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GIRLS WHO PROGRAM AUTONOMOUS CARS

A BWSI MINI-RACECAR CRASH COURSE

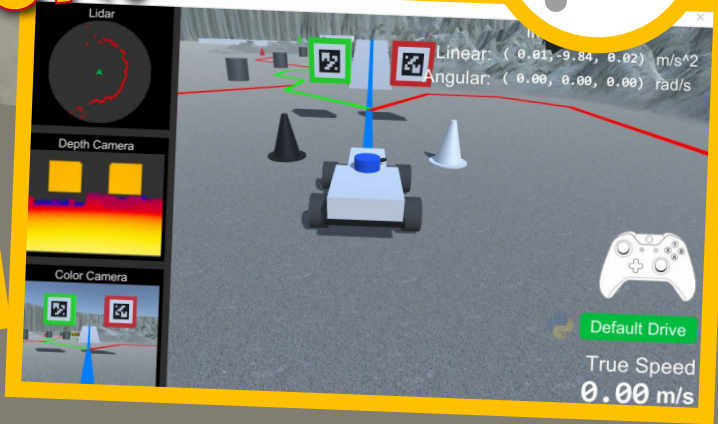
A BWSI MINI-RACECAR CRASH COURSE

NO HARDWARE REQUIRED!

NO COST!



LEARN TO CODE PYTHON!



NO PRIOR EXPERIENCE REQUIRED!

Who: Female High School Students (10th and 11th grade) interested learning about coding and robotics! Beginners encouraged!

When: Saturdays 11am-2pm (EST) – October 14, 21, 28, November 4, 11, 18, December 2, 9 2023

Where: Virtually, through Zoom!

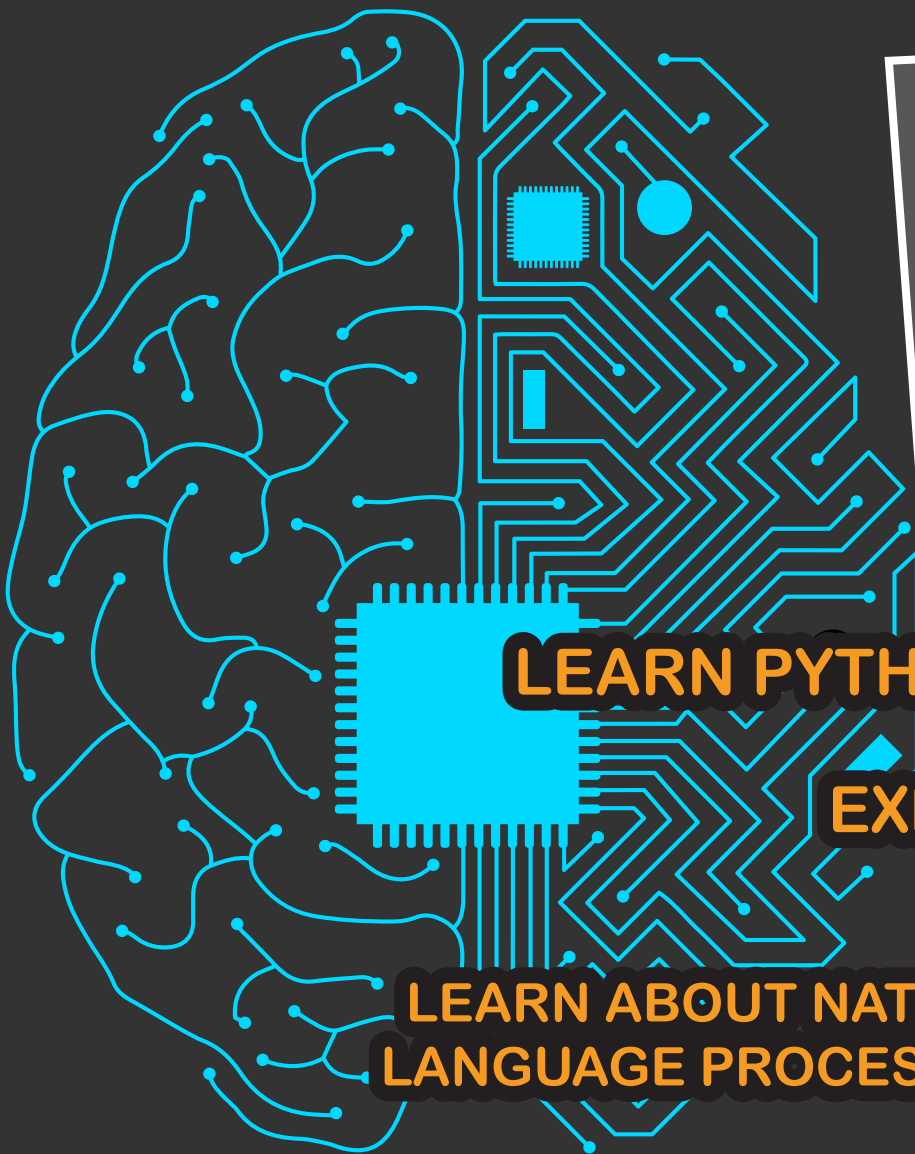
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Girls who program cognitive assistants! — a BWSI crash course



An introduction to artificial intelligence through building an autonomous cognitive assistant!

LEARN PYTHON!

EXPLORE MACHINE LEARNING!

LEARN ABOUT NATURAL LANGUAGE PROCESSING!

No Prior Experience Required!

Who: Female High School Students (10th and 11th grade) interested in learning about code and artificial intelligence! Beginners Encouraged!

When: Saturdays 11am-2pm (EST) – October 14, 21, 28, November 4, 11, 18, December 2, 9 2023

Where: Virtually, through Zoom!

Registration Form: https://mit-bwsι.formstack.com/forms/bwsι_fall2023

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Many Interesting Things:

For Aspiring Engineers
From Transistors to Data Science

A BWSI Medlytics intro course by Christian Cardozo

An early introduction to the technologies that shape our world,
with applications to medical data analytics!

Python • Computer Architecture • Machine Learning
Computer Vision • Linux • The Internet

No prerequisites.
No pressure.

**NO PRIOR
EXPERIENCE
REQUIRED!**

- WHO:** Female High School Students (10th and 11th grade) interested learning about computers, coding and medical data analytics. Beginners Encouraged!
- WHEN:** Saturdays 10am-1pm (EST) – October 14, 21, 28, November 4, 11, 18, December 2, 9 2023
- WHERE:** Virtually, through Zoom!
- REGISTER:** https://mit-bwsi.formstack.com/forms/bwsi_fall2023

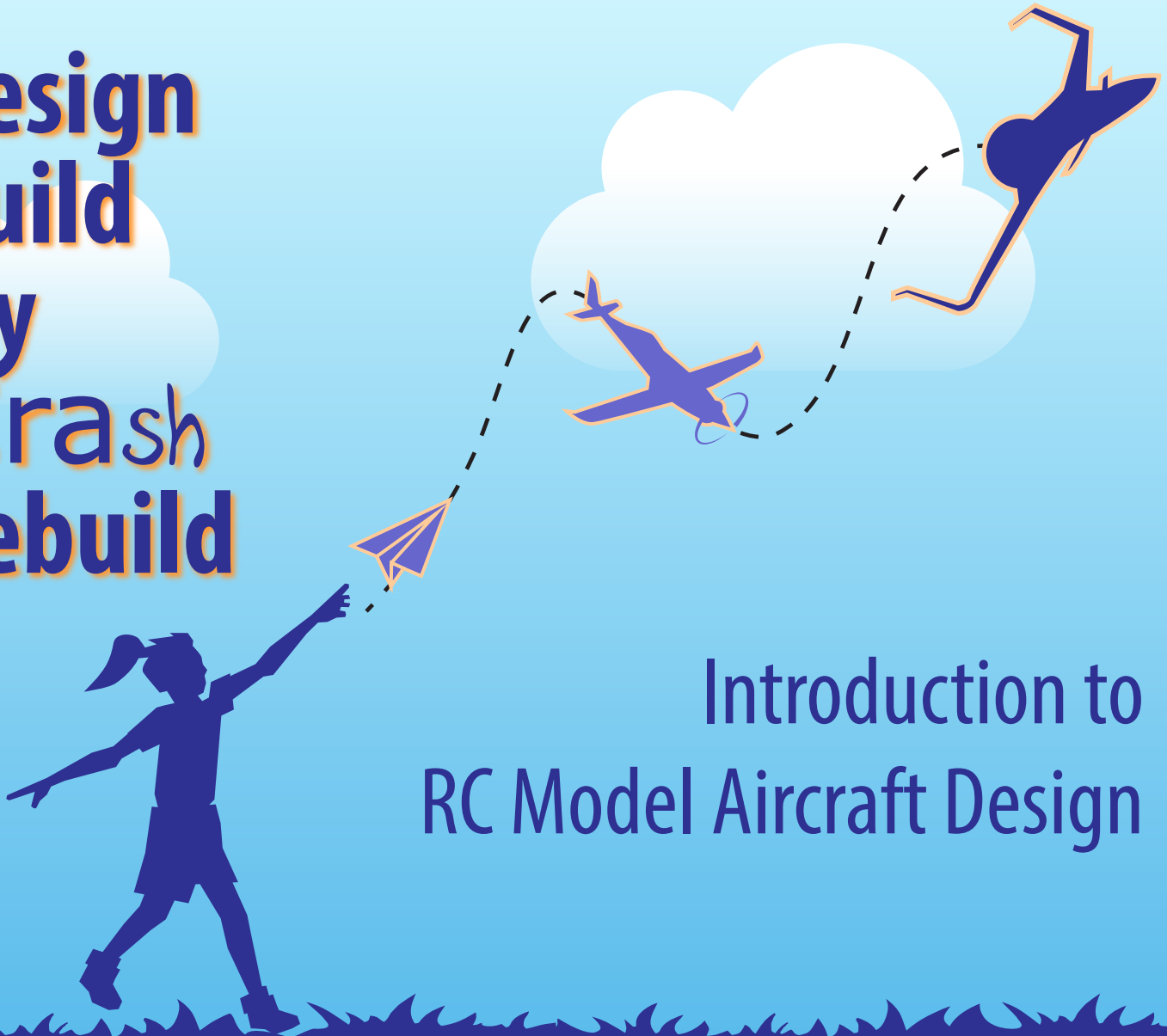
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Girls Who Design, Build and Fly Model Aircraft — A BWSI Crash Course.

**Design
Build
Fly
Crash
Rebuild**



Introduction to RC Model Aircraft Design

**No Prior
Experience
Required!**

Who: **Female High School Students (10th and 11th grade)** interested in Aerospace and Aeronautics.

When: Saturdays 11am-2pm (EST) – October 14, 21, 28, November 4, 11, 18, December 2, 9 2023

Where: Virtually, through Zoom!

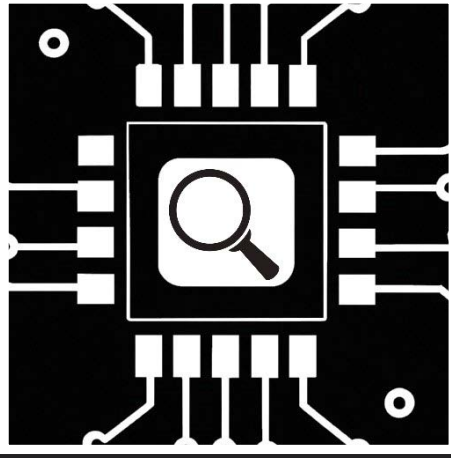
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Girls Who Want to Learn the Basics of ASICs



Semiconductors and Application Specific Integrated Circuits (ASICs) are everywhere. In this course students will learn about semiconductors and get hands-on experience on how to design and arrange them to perform a specific function.

The screenshot displays the SILWIZ design environment. On the left, the code editor shows Verilog-like code for a pipelined Pythagorean theorem calculator. The center shows a schematic diagram of the logic blocks. On the right, a cross-sectional view of a transistor is shown with a legend for materials like substrate, well, diffusion, and metal. Below that, a waveform viewer shows the timing of signals like TLV and the calculator's output.

NO PRIOR EXPERIENCE REQUIRED!

Who: Female High School Students (10th and 11th grade) interested in learning about semiconductor design and fabrication! Beginners encouraged!

When: Saturdays 11am–2pm (EST) – October 14, 21, 28, November 4, 11, 18, December 2, 9 2023

Where: Virtually, through Zoom!

Registration Form: https://mit-bwsf.formstack.com/forms/bwsf_fall2023

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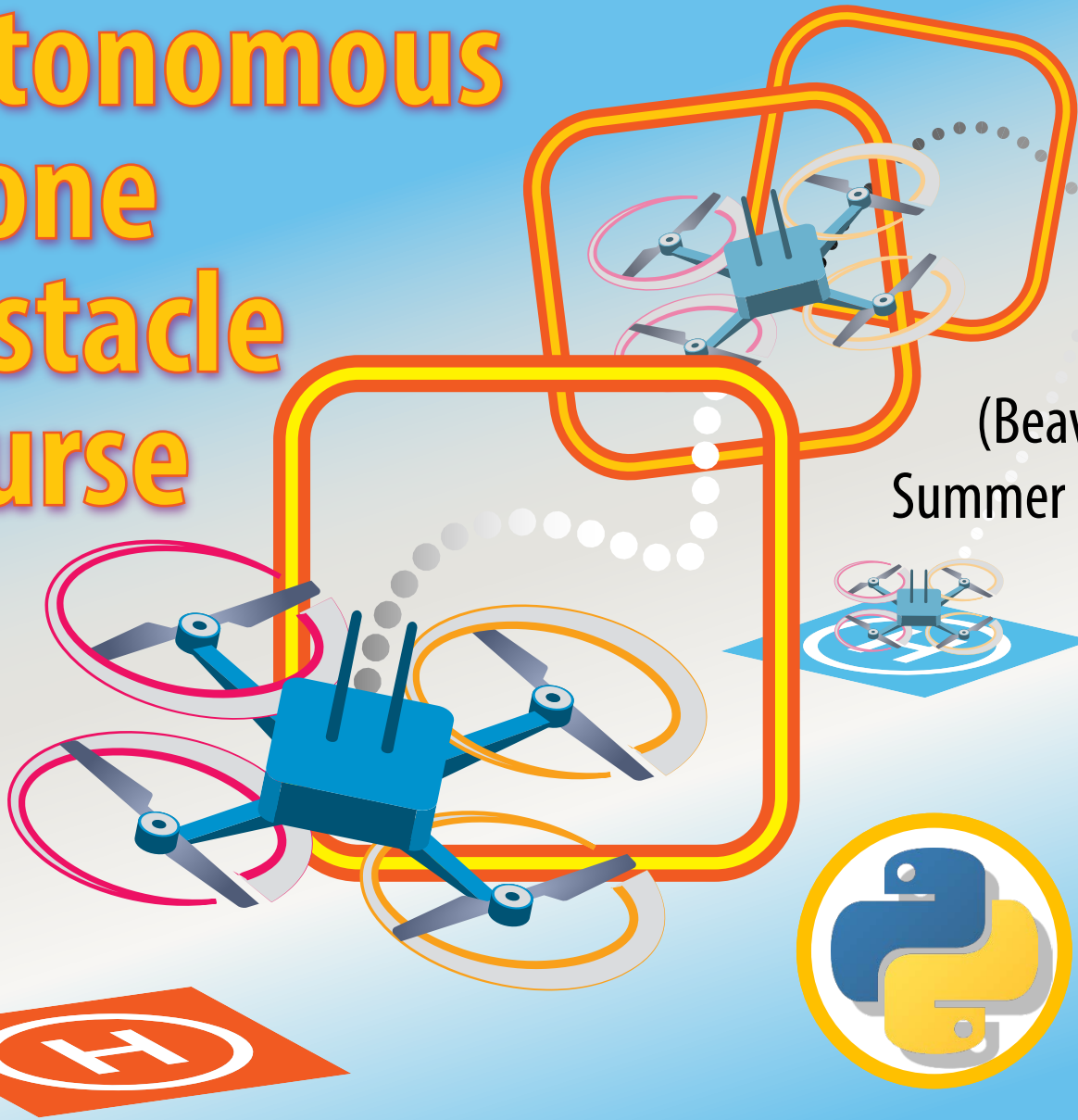


BEAVER WORKS
Lincoln Laboratory | School of Engineering



Girls Who Program Racing Drones *Beaver Warrior*

Autonomous Drone Obstacle Course



A
BWSI
(Beaver Works
Summer Institute)
Course



Learn
to Code
Python

No Prior Experience Required!

Who: Female High School Students (10th and 11th grade) interested in Aerospace and Aeronautics.

When: Saturdays 11am–2pm (EST) – October 14, 21, 28, November 4, 11, 18, December 2, 9 2023

Where: Virtually, through Zoom!

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