Bolan Xu

1 (815) 713-9047 | bolanx@bgsu.edu | github.com/bolanxu | Bowling Green, OH

OBJECTIVE

Aspiring Electronics and Computer Engineering researcher seeking advanced academic training with the long-term goal of earning a Ph.D. in the field.

EDUCATION

Bowling Green High School (BGHS) — Bowling Green, OH **August 2023-Present**

- **GPA:** 4.434 / 4.0 (Weighted)
- **Class Rank:** 1 out 233
- **Advanced Placement (AP) Courses:** Computer Science, Calculus AB, United States History, Chemistry, and Language and Composition
- **Honors Courses:** Algebra 1, Geometry, Pre Calculus, English (Grades 6-10), World History, United States History
- **Languages:** French I-III
- Perfect Score on the Ohio State Geometry End-of-Course Exam (2023) and the Ohio State American History End-of-Course Exam (2025)
- **National Honor Society (NHS) Member** (Inducted 2026)

Bowling Green State University (BGSU) Fall CCP — Bowling Green, OH **May 2025 - December 2025**

- **GPA:** 4.00 / 4.00 (Unweighted)
- **Summer Semester** **May 2025 - July 2025**
  - CS 2020 Intermediate Programming
- **Fall Semester** **August 2025 - December 2025**
  - MATH 3320 Elementary Linear Algebra
  - MATH 2320 Calculus and Analytical Geometry II

LEADERSHIP & EXTRACURRICULARS

Research With Professor — Bowling Green State University (BGSU) **November 2025-Present**

- Work with Electronics and Computer Engineering Professor focusing on FPGA design and digital systems
- Learn, develop, and test hardware designs using Verilog HDL
- Utilize AMD Xilinx Vivado for synthesis, simulation, and implementation

STEAM Club Member — Bowling Green High School **August 2024-Present**

- Competed in regional Science Olympiad at Bowling Green State University (2025–2026)
- Achieved top placements in engineering events: 2nd - Machines, 2nd - Engineering CAD, 3rd - Electric Vehicle, 4th - Circuit Lab
- Developed hands-on skills in problem-solving and mechanical/circuit design

Orchestra Vice President (Cello) — Bowling Green High School **August 2020-Present**

- Co-Vice President, Cello Section (Five-year member)
- Associate Principal Chair, Chamber Orchestra Member
- Member of Chamber Orchestra (Audition Required)
- Superior Rating (I) at 4 OMEA District Solo & Ensemble Festivals (2022, 2023, 2025, 2026)
- Twice selected for OMEA District I Orchestra Honors Festival (2023, 2026)

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TEDx Talk Speaker— Maumee Valley Country Day School (MVCDS) **April 2026**
- Delivered a TEDx talk on embracing limitations to foster creativity and problem-solving
- Shared personal journey of discovering passion through self-directed tech and engineering projects
- Engaged an audience of around 250 students, parents, adults, and educators

BGSU AI Café Invited Speaker — Bowling Green State University (BGSU) **April 2026**
- Participated in roundtable panel discussion on AI in education with students and faculty

PROJECTS

XUTOPIA School Delivery & Helper Robot — Bowling Green High School **January 2025-Present**
- Designed and built a remotely controlled delivery robot for in-school use
- Developed custom differential motor driver and integrated circuitry with mechanical constraints
- Programmed Arduino firmware and Python software on Raspberry Pi for TCP/UDP communication
- Created mechanical components using Onshape CAD and 3D printing

TERMINUS: A Terminal-Interface Style Phone — Personal Project **February 2026-Present**
- Programmed ESP8266 microcontrollers for embedded systems and IoT networking
- Developed Python-based web chat server on PythonAnywhere for client-server communication
- Designed and soldered custom keyboard, building hardware prototyping and fine soldering skills
- Built bash-style terminal on microcontroller with HTTP POST/GET networking
- Currently creating custom PCB and 3D-printed enclosure, gaining PCB design and CAD experience

Mars Lander Simulator Panel — Personal Project **May 2024-August 2024**
- Built a Mars lander control panel with real-time physics simulation, honing system design and applied physics skills
- Programmed MCS-51 microcontroller in C using timers, interrupts, and ADC
- Designed and fabricated custom PCB in Eagle, integrating LEDs, 7-segment displays, buttons, potentiometers, and LCD
- Gained hands-on experience in embedded hardware, low-level programming, and electronics prototyping

SKILLS & ABILITIES

- **Programming Languages:** Python, C++, Embedded C, Assembly (MCS-51), Verilog
- **Frameworks & Libraries:** OpenCV, Robot Operating System (ROS) 1 & 2, Pygame, SDCC, OpenAI
- **Development Tools & Software:**
  - **ECAD:** Eagle PCB, EasyEDA
  - **CAD:** Fusion 360, Onshape, FreeCAD, Blender
  - **Simulation & FPGA:** Qucs-Spice, AMD Vivado
  - **IDE:** Keil 51, Visual Studio Code, STM32CubeIDE
  - **3D Printing:** Cura, PrusaSlicer
- **Hardware & Embedded Systems:** STC (MCS-51), STM32, Arduino, ESP8266/ESP32
- **Other:** Soldering, 3D Printing
- **Soft Skills:** Leadership, project planning, technical documentation, teamwork

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REFERENCES

Matthew McEwen
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Lily Ahmed
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