Zain Ali

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EDUCATION

University of Illinois, Chicago **Expected Graduation: May 2025**
BS in Computer Science, Minor in Mechanical Engineering
Relevant Coursework: Data Structures, Statics

SKILLS

C, C++, Java, Python, SQL, Linux, KiCAD, 3D Printing, Machining

RELEVANT EXPERIENCE

UIC Maker Space **July 2022 – Current**
Position: *Internship, extended to part-time Lab Aide*

- Built Wireless Speakers
  - Docker Application on Raspberry pi to connect wirelessly to Tidal using Shell Script and Python
  - Configured raspberry pi drivers to decode digital audio signal using external DAC
- Assisted 100s of students with various projects from research, personal, and class use

Chicago Hyperloop **August 2021 – Current**
Position: *President: August 2022 - August 2024, Treasurer August 2024 - Present*

- Working Towards prototyping and research a new form of transportation that travels at high speeds (400 mph+) through vacuum tubes
  - Hold Meetings for Members (~10 people) and Hold events such as Involvement Fairs, Workshops, and creating Projects for members in a variety of fields
  - Negotiate with sponsors, and advisors for software, hardware and financial assistance
  - Obtained 2 sponsors Altium and EMWorks
- Prototyped High Voltage Battery Systems
  - Precharge and Discharge Circuits, Battery cooling, 20S BMS, and more
  - Raspberry Pi for Master Computer (Java)
    - Wireless communication for “Mission Control Laptop” with Failsafes
    - Communicates to 3 clients Arduino's inside the pod with USB Serial
  - Designing 70V Battery pack for propulsion Systems
- Designed and Prototyping Hyperloop Hover Engine
  - Designed Components in Inventor, used ANYS FEA to simulate spinning Halback array magnets to levitate across an aluminum surface
  - Machined joints on lathe
- Control Systems
  - Wirelessly communicates to Mission control laptop with failsafes from a headless raspberry pi
  - communicates to 3 arduino’s controlling various sensor inputs and control motors
  - designed and prototyped HV controller board in KiCAD
- Website: https://chicagohyperloop.github.io/website/
  - HTML, CSS, Javascript
  - Place for new members and potential sponsors to find information about joining us

PROJECTS

Machining Projects **Skills**: *Machining*

- Aluminum 6061 Dice made using a Bridgeport Mill
- Restored Horizontal Bandsaw, by Machining Vise components from Mild Steel
- Brass and Aluminum Darts made on a Manual Lathe

3 Hand Poker **Skills**: *Java, Git, UML*

- Used Server – Client Model for MatchMaking, and to start games
- Collaborated with a partner to create a 3-hand poker Application using Github and UML

Divvy Bike Data **Skills**: *C++*

- Used data from over 25,000 divvy bikes across Chicago to calculate popularity, distance traveled, and Shortest Path

MacroPad **Skills**: *Kicad*

- Designing PCB with 9 buttons a volume dial and an OLED Display