Christal O. Biney
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SUMMARY

Driven mechanical engineering student with hands-on experience in outreach, problem-solving, and tutoring seeking opportunities to apply innovative solutions in the fields of energy, aviation, and aerospace engineering through summer 2025 internships.

EDUCATION

The University of Houston | Major: Bachelor of Science Mechanical Engineering **Expected: May 2027**

Honors & Awards: Patti Grace Smith Fellowship 2023| Princeton Plasma Physics Workshop Awardee 2024 | National Medical Device Make-A-Thon 1st Place 2024| First Year Writing Award 2023| Cougar Artist Scholarship Recipient For Viola Studies

EXPERIENCE

Environmental Turbulence Researcher Aug 2024 - Present
Applied Turbulence and Land-Atmosphere Systems Lab| Houston, Texas
- Operated wind tunnel to take velocity measurements using a Cobra probe, ensuring accurate data collection for air velocity analysis.
- Assisting graduate student in coding stepper motors for remote control via a Wi-Fi controller, enabling precise force balance

Flight Control Actuators Lead- Guided Fall Experiment Jan 2023 - Present
Undergraduate Student Instrumentation Program| Houston, Texas
- Conduct Balloon-Borne and Ground-based Geospace, Earth, and Atmospheric Science Investigations in the Auroral Zone.
- Develop plans for the design, construction, and purchase of the actuators that provide sufficient force, speed, and travel distance for parachute control and balloon/suspension release mechanisms.

Mechanical Engineering Intern May. 2024 - August 2024
ABB| Houston, Texas
- Translated customer process descriptions for workflow automation into RobotStudio, importing and creating geometries in SolidWorks.
- Utilized RobotStudio to automate pick-and-place tasks on the Yumi collaborative robot for customer proof of concept.
- Revised and rewrote corrective and preventative actions for ABB's first medical device in compliance with FDA standards, securing management approval.
- Utilized SolidWorks to accurately recreate deliverables for customer projects, ensuring precise real-world dimensions.

Undergraduate Teaching Assistant Sept. 2023 - Present
University of Houston| Houston, Texas
- Oversee over 50 first-semester students' ENGI 1100: Intro to Engineering coursework grading and host two hours of office hours per week.

Python Coding Instructor Oct. 2023 - Jan. 2024
SheCodes Cougarettes| Houston, Texas
- Partnered with a University of Houston professor, Young Women's College Preparatory Academy computer science teacher, and co-instructor to cultivate suitable Python lessons that meet curriculum objectives for 20 students.
- Led one hour of weekly Python lessons with an ultimate end goal of having students create their own final project resembling a choose-your-own-adventure book to showcase at the University of Houston.

NASA Innovative Advanced Concepts/Space Technology Mission Directorate Intern May 2023 - Oct. 2023
Bryce Space and Technology| Remote
- Performed an analytical study on the taxonomy of over 200 NIAC studies and utilized Excel to organize data and visualize the distribution of funded NIAC proposals across various NASA taxonomies.
- Selected 50 STMD academic and industry projects that aligned with NASA's strategic framework to be presented to members of Congress.

PROJECTS

MATLAB APP Developer Jan. 2023 - May 2023
ENGI 1331: Improving Urban Infrastructure|Houston, Texas
- Developed an interactive MATLAB app component allowing users to engage in user-guided research about Houston's modes of public transit and their current issues in response to the NAE Grand Challenges.

Excavation Team Nov. 2023
FLUOR Design Challenge| Houston, Texas
- Assisted in civil excavation calculations for pipeline trenching across various terrain types and optimization of construction equipment and foundation design
- Presented project at FLUOR for engineers earning third place in the design competition.

Researcher/Design Challenge Participant - Team No Scrubs Feb. 2024
National Medical Device Make-A Thon | San Antonio, Texas
- Collaborated with team to develop and present a novel urine-based diagnostic device for preeclampsia detention for women in developing countries.

EXTRACURRICULAR/LEADERSHIP

Member & Co-Outreach Chair (2023-2024) Sept. 2022 - Present
Society of Women Engineering| Houston, Texas
- Planned and organized outreach initiatives to inspire middle and high school girls to pursue higher education in STEM
- Oversaw a committee of 10 members through the creation & planning of future events in collaboration with co-outreach chair

Design Build Fly Structures & Competitive Rocketry Propulsion Member Oct. 2022 - Present
AIAA University of Houston| Houston, Texas
- Use parametric CAD in Autodesk to optimize the design of key aircraft components such as the wing spar.
- Translating CAD designs to CNC-ready files in Autodesk Fusion for custom rocket propulsion components.

SKILLS

MATLAB | Python | SOLIDWORKS | AutoCAD | RobotStudio | Arduino| Medical Device CAPA Writing | AutoDeskInventor (Parametric Design)| GANTT Charts