Mary Boogaard

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PROFESSIONAL SUMMARY

Mechatronics Engineering junior with hands-on experience in sensor navigation, embedded C/C++ and python, and robotic systems. Student Representative for ABET accreditation visit; helped secure NGR status; 1st-place winner in IEEE TAMU & Arm Technothon; contributed to NASA NCAS rover hardware design. Seeking Summer 2026 internship in automation/robotics/Satellites/Space Exploration to apply sensor integration and programming skills.

EDUCATION

Texas A&M University, College Station, Texas May 2028
Degree in Multidisciplinary Engineering Technology Mechatronics Track
Minors: Electrical Engineering and Embedded Systems Integration GPR: 3.50 / 4.00

- MXET Program earned ABET Next General Review Status (NGR) – highest accreditation outcome

Relevant Coursework *Special course (email for more information)**:*** Robotics System Design | Embedded Systems Derivation in C | Analog Electronics | Mechanics for Technologists | Topics in Applied Math I

TECHNICAL SKILLS

Languages: Python, C, C++
Hardware: FPGA boards, Arduino, STM32, Raspberry Pi 5, RFID, Servo/DC Motors, Strain Gauges
Tools/Sensors: MATLAB, Ultrasonic Range/Distance/Color Sensors, LiDAR, CAD design
Certifications: Python (OpenEDGE), C++ (Codecademy), NSLS Leadership
Soft skills: Troubleshooting, Technical Writing, Leadership, Freehand sketching, Engineering Design Process

PROJECTS/RESEARCH OPPURTUNITIES

SomTECH: University Rover Challenge - *Electrical Team Contributor*

- Diagnosed and resolved Raspberry Pi 5 boot failure, recovering 100% of codebase in <2 hours
- Participated in weekly meetings to experiment with different technologies such as ROS, LiDAR, and game pad control

IEEE: TAMU & Arm Technothon Project (1st place) - *Student Research Competition*

- Designed a smart cat feeder using Strain Guage, Servo Control, STM32, RFID, and C++ to prevent overfeeding in multi-pet homes.

NASA's Community College of Aerospace Scholars (NCAS) - *Hardware Specialist* (Remote, Marshall SFC)

- Selected for opportunity because of high GPA; designed a rover wheel/motor system for moon mission
- Delivered technical reports and 3D designed prototypes using freehand sketching.

ACTIVITIES

Student Organizations: Women in Robotics (WIRED) | SomTECH | IEEE | NSLS | Tau Sigma National Honor Society

PUBLICATIONS

Boogaard, Mary. (2023) DNA Origami and Ultrasound Therapy. The Da Vinci Academic Journal, 5(7), e4. https://shakespeareanddarwin.wordpress.com/2023/12/18/the-da-vinci-academic-journal-volume-5-issue-7-e4-dna-origami-and-ultrasound-therapy/.

HONORS/ ACCHIEVEMENTS

- Student Representative, ABET Accreditation Site Visit (Oct. 27, 2025)
- Student Representative, AlamoPROMISE Scholarship on Local News Station (2023) (https://www.youtube.com/watch?v=cqRyHDFi_ho)
- Community College's President's List (Fall 2022, Fall 2023, Spring 2023) | Community College's Dean's List (Fall 2023, Spring 2023)
- IEEE: Technothon – 1st place out of twelve teams
- General Stevens Scholarship; 4-time recipient of TAMU Mother's Club Scholarship; Semmes Scholarship; Phi Theta Kappa - Beta Sigma Delta Scholarship; AlamoPROMISE Scholar

WORK EXPERIENCE

Promise Land Acres – *Nanny* Summer 2025

- Supervised two 6-year-old twins, providing them with food, entertainment, and summer school activities, and performed animal husbandry

City of San Antonio – *Recreation Assistant* Summer 2023, 2024

- Collaborated with the site supervisor to troubleshoot scheduling conflicts, document incidents, and maintain an organized environment while managing ~65 children aged 6 – 13 years.