Khisa-Lee Lebrun

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Education

Texas Tech University **January. 2022 – August. 2025**
Electrical Engineering *Lubbock, Texas*

Projects

Local network scanner application | *React Typescript, Python, Flask* **May 2025**
- Creation of a Windows and Android application using a Flask API to connect the front and back ends.
- Use of a Raspberry Pi 4 and routers to repeat the local network and retrieve network information.
- Transmit the collected information and display it on the application.

Anti-personal mine drone detector | *Betaflight* **Prototyped**
- Planning, so that the project can be implemented in unconnected locations.
- Setting up a mapping system to compensate for the lack of GPS.
- Installation of a gasoline-powered battery system to compensate for the lack of electricity in these remote areas.

Personalized tricopter | *Betaflight* **Prototyped**
- Engineered an F22-inspired tricopter using Betaflight and Solidworks, 3D-printing a custom frame with front yaw control.
- Model and print the drone structure.
- Test and adjust the drone to minimize the risk of crashes and accidents.

AI game of "I Spy" | *Python, Yolo, Halo* **November 2024**
- Built an AI-powered 'I Spy' game on Raspberry Pi 5 using Python, YOLO, and Halo for object recognition. Implemented laser-based mapping, achieving 95% accuracy in tracking 10+ object categories.
- Implementation of a laser system, using its own part mapping.
- Use of Halo and Yolo to recognize and track certain categories of objects.

Autonomous penalty-shooting robot | *Verilog* **February 2024**
- Use the Basys 3 Artix-7 and an H-Bridge to control a robot whose task is to locate a ball and throw it precisely into a target defined by infrared transmitters.
- Creation of a system of microphones and filters to locate the ball, which emits an audible sound of 1 kHz.
- Creation of multiple circuits and PCBs.

Experience

Texas Tech Drone Research Laboratory **October 2024 – Current**
Laboratory Researcher *Lubbock, Texas, USA*
- Build drones according to university requirements or to meet global challenges.
- Configured flight control systems using Pixhawk, Betaflight or Ardupilot

Roav 7 **May 2024 – August 2024**
R&D intern *Le Havre, Normandie, France*
- Developed a .NET MAUI-based app for drone pilots, streamlining access to pre/post-flight documents and accident reporting, adopted by 20+ users.

Perles et Café **May 2023 – August 2023**
Manager *Saint-Sauveur, QC, Canada*
- Built an inventory management system using Excel, automating tracking for items.
- Prepare training program for new employees.

Technical skills

Programming Languages: Python, C/C++, C#, Java, Verilog, MATLAB, Typescript, Assembly
Drone Development: Betaflight, Pixhawk, Flight Control Systems, Autonomous Navigation, Sensor Integration
Tools: Solidworks, KiCad, Autocad, Vivado, VS Code, .NET MAUI.
Others: HTML/CSS, Computer Vision (YOLO, Halo), PCB Design
Languages: French (Native), Spanish (Intermediate), English (Fluent)
Soft Skills: Problem-Solving, Team Collaboration, Project Management.

Extracurricular activities

Society of Women in Engineers **January 2023 – Current**
Member
IEEE **January 2025 – Current**
Member