# Eric Codrea

codrea.eric@gmail.com | +1 (872) 985-8798
linkedin.com/in/eric-codrea | www.decarabas.dev | github.com/MDecarabas

## Education

**Northwestern University**                                                                                             **Evanston, IL**
*Masters of Science in Robotics*                                                                              *Sep 2021 – Present*
**INSA Lyon**                                                                                                             **Lyon, France**
*Minor in Robotics*                                                                                              *Sep 2020 – Feb 2021*
**University of Twente**                                                                                  **Enschede, Netherlands**
*Bachelor of Mechanical Engineering*                                                                  *Sep 2018 – Jul 2021*
*Minor in Mathematics*                                                                                          *Jan 2019 - Jul 2020*

## Work Experience

**iPaw Ltd.**                                                                                            **London, United Kingdom**
*Co-Founder & Programmer*                                                                                  *Nov 2020-Present*
- Coded essential features of app with Flutter software development kit
- Integrated essential APIs for app to be able to function with custom CRM and backend systems
- Created product roadmap & market implementation strategy for company

**CIT Automatizari**                                                                                           **Bucharest, Romania**
*Technician*                                                                                                       *Jul 2020 – Sep 2020*
- Utilized CAM software to create plans for CNC Lathe & Mill to produce new parts
- Researched different CNC tools to further factory capacity
- Streamlined website to ease accessibility, and inventory within warehouse
- Diagnosed problems that clients were having on-site with automation solutions supplied by company

**University of Twente**                                                                                  **Enschede, Netherlands**
*Engineering Specialist for UTwenteArtist-in-Residence, Philip Vermeulen*                      *Oct 2019 – Jan 2020*
- Developed and built robots able to move in moiré patterns with the goal of making the audience question their senses
- Translated artist's abstract vision into reality of a physical installation to be presented at Dutch museums

**Romaero S.A**                                                                                                **Bucharest, Romania**
*Aerospace Engineering Intern*                                                                            *Jul 2019 – Sep 2019*
- Manufactured parts for Boeing aircrafts
- Researched novel cost-efficient, innovative ways to develop aircraft components
- Conducted maintenance on military and civilian aircrafts
- Organized and coordinated Romaero presentation at Bucharest Air Show

## Notable Projects

**Drone Hijacker**                                                                                              *Jan 2022 – Present*
- Ongoing project coding a drone that locates commercial drones using wifi signals
- Implemented function to de-authenticate targets from network and re-authenticate them on a personal one, yielding control of a drone swarm to user.

**SLAM From Scratch**                                                                                      *Jan 2022 – Present*
- Ongoing project coding a SLAM algorithm from scratch to be implemented on Turtlebot robots

**Hype Hat**                                                                                                      *Nov 2021 - Dec 2021*
- Programmed a PIC microcontroller in C to interface with sound, light, and LED peripherals
- Assembled PIC alongside peripherals into a wearable Hat designed for parties & student events

**Bartender Robot**                                                                                          *Nov 2021 - Dec 2021*
- Interfaced with a Franka Emika Panda arm through MoveIt & ROS
- Coded a framework for arm to reach, grab, pour in a cup, and place back available ingredients when user requested, through typed or spoken commands, a drink

**Designed Prototype of Novel Endoscopic Robotic Capsule**                               *May 2020 – Jul 2021*
- Simulated using Magpylib magnetic forces required to induce magnetic torque for capsule navigation
- Prototyped using CAD & 3D printers various capsule bodies to store components in a safe & aerodynamic body
- Prototyped using CAD & calculated velocities of various locomotion methods for capsule

**Insa Lyon Swarm Robotics Research Projects**                                                  *Oct 2020 – Jan 2021*
- Implemented computer vision for LED color detection using OpenCV
- Connected and built a robotic swarm
- Ensured swarm can communicate using color perceived through a Raspberry Pi camera

**Winner of 2020 Networking Prize (University of Twente Entrepreneurial Challenge)**    *Mar 2020 – Jun 2020*
- Proposed a drone swarm system for remote locations to aid in forest fire detection & prevention
- Most voted project, based on public interest
- Part of top 20 teams, winning a spot at university incubator

## Skills

**Programming:** Python, C, C++, Dart/Flutter, JavaScript, HTML, CSS, Git, Linux, MATLAB
**Robotics:** Robotic Operating System (ROS), Computer Vision, Gazebo, Rviz, MoveIt
**Technical**: CNC Milling/Turning, Microcontrollers, 3D Printing, SolidWorks, Laser Cutting, Soldering, Welding
**Languages:** English, Romanian, French, Russian