# Chloé Benz

**AEROSPACE + AUTONOMOUS SYSTEMS & ROBOTICS ENGINEER**

Fresh graduate from a dual Master's program. Research experience in GNSS navigation. Looking for an entry level position.


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## EDUCATION

2020-2022 **ILLINOIS INSTITUTE OF TECHNOLOGY – DUAL DEGREE PROGRAM** Chicago, IL, United States

***Master of Science - Autonomous Systems and Robotics***

- **TA in Advanced Mechanics of Solids & Fluid Dynamics** | Fall 2020, Spring 2021
- **RA in the Navigation Laboratory** | Fall 2021, Spring 2022
- **MSc Thesis |** *Carrier Phase Multipath Characterization and Frequency-Domain Bounding, under the supervision of Pr. Boris Pervan*

Coursework include: Modern Control, Robotics Motion Planning, SLAM, Optimal State Estimation (Kalman Filtering), Machine Learning, Computer Vision, Data Driven Modelling, Sensor Fusion

2018-2020 **ISAE-ENSMA – DUAL DEGREE PROGRAM** Poitiers, France

***Diplôme d'Ingénieur – Mechanical, Materials and Aerospace Engineering***

- **Member of ISAE-ENSMA's student association** | Planned and supervised on-campus events, organized the freshman students' weekend with a budget of 70 000 € – 2019/2020

Coursework include: Automatic Control, Signal Processing, Aerodynamics, Mechanics, Fluid Mechanics, Introduction to Flight Dynamics, Structures, Materials, Optimization, Orbital Mechanics, Classical Dynamics

2016-2018 **LYCEE KLEBER** Strasbourg, France

***Two-year intensive program in preparation for highly selective entrance exams to Engineering Schools***

Coursework include: Algebra, Topology, Calculus, Statistics, Electronic Circuits and Power Electronics

## EXPERIENCE

Jun. – Sept. 2020 **SCHOOL OF COMPUTER SCIENCE** Birmingham, United Kingdom – *Conducted remotely*

***Junior Engineer Internship, under the supervision of Dr. Mohan Sridharan***

- Designed a restaurant knowledge domain in CR-Prolog SPARC for an autonomous agent to plan diverse customer-oriented tasks and collaborated on linking it to a simulated environment made with PyBullet

## PROJECTS

2022 **PLANT WATERING SYSTEM [ONGOING]**

- Engineer an autonomous plant watering system using an ESP-32 development board with touch, remote and external clock-based triggering capabilities

2021 **3D SLAM FOR INDOORS UAV**

- Implemented a 3D SLAM based on simulated noisy range readings for an UAV with ground-based landmarks in Python, using a particle-based EKF algorithm for fusing LiDAR and accelerometer measurements

2021 **CHEEZAM**

- Trained a classifier on images scraped from the web in Python using TensorFlow, achieving 80% accuracy on a 5-cheeses dataset comprising similar looking cheeses, using VGG-16 architecture and data augmentation

2020 **RETRACTABLE WINGS DISASTER RESPONSE UAV**

- Designed and 3D modeled a rack and pinion wing retraction system on Fusion360 as a 2-students team

2019 – 2020 **BLACK-OUT CHALLENGE**

***Semi-finalist for Safran Electronics and Defense's Black-Out Challenge***

- Formalized, pitched, and prototyped a solution to a prolonged GNSS shutdown for ground vehicles based on IMU and OBD-II dead reckoning, using fixed beacons and nearby users' smartphones BLE signals

2019 **TEXAS HOLD'EM POKER BOT**

- Led a 4-students team on implementing a poker playing bot in Ada

## SKILLS & INTERESTS

Spoken Languages:

- **French** | Native language
- **English** | Bilingual – TOEIC:985/990, TOEFL:110/120, GRE:316/340 (159V, 157Q, 4.0A) – *2020*

Programming Languages, Software:

- **Python, CATIA, LaTeX, Microsoft Office Suite** | Advanced
- **Ada, C++, MATLAB, TensorFlow, CR-Prolog SPARC, Adobe Lightroom** | Intermediate
- **Fortran, React, SQL, Git, Adobe Photoshop** | Basics

Extracurricular activities:

- **Dance and Performing Arts** | Performed in large scale events such as *Lion's Club* fundraisers, taught teams of 5-10 dancers from 2019 to 2022, choreographed for ISAE-ENSMA's graduation show
- **Analog and Digital Photography**