

# Chloé Benz

AEROSPACE + AUTONOMOUS SYSTEMS & ROBOTICS ENGINEER



Chicago, IL (*willing to relocate*)



chloe.c.benz@gmail.com



www.linkedin.com/in/chloe-benz

## 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
- 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, Introduction to Electronic Circuits and Power Electronics, Chemistry, Engineering Science, Electromagnetics

## 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 basic 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

- 2021 **3D SLAM FOR UAV**
- Implemented a 3D SLAM based on simulated noisy readings for an indoors UAV with ground-based landmarks in Python, using a particle-based EKF algorithm for fusing measurements
- 2021 **CHEEZAM (CHEESE CLASSIFIER)**
- 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, with VGG-19 architecture and data augmentation
- 2020 **RETRACTABLE WINGS DISASTER RESPONSE UAV**
- Designed and 3D modeled a rack and pinion wing retraction system on Fusion360 for an UAV as a 2-students team
- 2020 **FRENCH ROBOTICS CUP – SAIL THE WORLD**
- Designed and modeled parts for a foldable lighthouse using CATIA
- 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** | Fluent – TOEIC: 985/990, TOEFL: 110/120, GRE: 316/340 (159V, 157Q, 4.0A) – *Results from 2020*
- **German, Spanish, Japanese** | Basic proficiency

Programming Languages, Software:

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

Extracurricular activities:

- **Dance and Performing Arts** | Proficient in multiple dance styles, performed on stage and in events such as *Lion's Club* fundraisers, taught teams of 5-10 dancers from 2019 to 2022, choreographed for ISAE-ENSMA's graduation show, took comedy and improvisation classes, co-wrote a play in 2015
- **Analog and Digital Photography**