ARTHUR FINDELAIR
MACHINE LEARNING ENGINEER

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EDUCATION

ILLINOIS INSTITUTE OF TECHNOLOGY — *Chicago, IL, USA*   *August 2021*
Master of Science in Electrical Engineering (GPA: 4.0/4.0)
Relevant coursework: Machine and Deep Learning, OOP & ML in C++, Computer Vision, AI and Edge Computing.

ISAE-ENSMA — *Poitiers, France*   *August 2021*
Diplôme d'Ingénieur (equivalent to Master's degree) in Aeronautical Engineering
Relevant coursework: Tensor Calculus, Embedded Systems, Signal Processing, Data Managing, Probabilities.

TECHNICAL SKILLS

Languages: Python • C++ • Java • JavaScript • SQL • Ada
Technologies: TensorFlow • TensorRT • OpenCV • Linux • Source Control (Git) • PlatformIO • QT

EXPERIENCES

RESEARCH PROJECT — *ECASP Laboratory, Chicago, IL, USA*   *April — August 2021*
- Built an autonomous drone supporting embedded ML applications by augmenting the hardware platform with an embedded GPU.
- Implemented a pose classification pipeline trained on a custom-made dataset and optimized with TensorRT to exceed an accuracy of 95% on partial inputs and an inference time lesser than 0.1 seconds to create a robust and responsive gesture-controlled drone.

MACHINE LEARNING RESEARCH INTERN — *Intelligent Robotics Lab, Birmingham, United Kingdom*   *June — August 2020*
- Built a QT application based on real-time gesture estimation to ease gesture recognition dataset creation and models evaluation.
- Created a Python package including a 22,000 instances dataset, data augmentation methods, TensorFlow pre-trained models, and utility tools, all accessible through a simple API to streamline the deployment of gesture-classification systems.
- Deployed a simulated environment to efficiently develop and test the common-sense reasoning system of an assistant robot.

TEAM LEAD — *Ensmasteel, French Robotic Cup*   *June 2019 — May 2020*
- Coordinated efforts of 9 members across 3 sub-teams to develop an autonomous robot competing in the French Robotic Cup.
- Increased robot's motion speed by 150% and accuracy by 75% by developing a robotic framework in C++ exploiting an ARM-based custom hardware platform including multiple encoder sensors, a LiDAR, and various actuators.

PROJECTS

ThisNightSkyDoesNotExist.com
- Trained and fine-tuned a StyleGAN2-ADA model on Google Colab by creating a 4500 images dataset from Instagram.
- Deployed a website exceeding 500 visits per day using React and a Firebase database to showcase GAN models' potential.

Black-Out Challenge by Safran (Top 10 out of 250 teams)
- Collaborated on a team of 4 to design and pitch an alternative to GPS through an inter-locating network of cars and fixed beacons.
- Created a self-locating module reaching a positioning error lesser than 1% through data-fusion of vehicle signals and IMU data.

Neural-Network Library Accelerator
- Accelerated frame-by-frame CNN inference process on CPU by more than 6 times compared to TensorFlow by developing an optimized C++ back-end library wrapped in a simple Python interface package using ctypes.

INTERESTS, ACTIVITIES & MISCELLANEOUS

- **Student committee, ISAE-ENSMA** — Organized events for more than 500 students in a 28-members team.   *2019 — 2020*
- **Drone instructor, Ensmaero** — Taught drone building process and flying fundamentals to beginners.   *2019 — 2020*
- Interests: Aerial photography and racing drones, Motorcycle, Photography, Basketball.
- Native French speaker and fluent in English.