ARTHUR FINDELAIR

SOFTWARE ENGINEER SPECIALIZED IN EMBEDDED MACHINE LEARNING

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I am a maker — I enjoy creating all sorts of things and learning new skills in the process. Autonomous systems particularly draw my interest. I am driven by the improvement of the interactions between machines and their environment. This ambition led me to develop a broad skill set in computer vision, machine learning, and embedded systems through various projects and a dual Master's degree.

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EDUCATION

ILLINOIS INSTITUTE OF TECHNOLOGY — *Chicago, IL, USA*   *Expected August 2021*
MASTER OF SCIENCE IN ELECTRICAL ENGINEERING (Current GPA: 4.0)
Relevant coursework: Machine and Deep Learning, OOP & ML in C++, Computer Vision, AI and Edge Computing.

ISAE-ENSMA — *Poitiers, France*   *Expected August 2021*
DIPLÔME D'INGÉNIEUR IN AERONAUTICAL ENGINEERING
Relevant coursework: Tensor Calculus, Embedded Systems, Signal Processing, Data Managing, Probabilities.

TECHNICAL SKILLS

Programming Languages: Python (TensorFlow, OpenCV, Numpy) • C++ • Java (Spring) • JavaScript (React) • SQL • Ada
Technologies: Linux (Ubuntu) • Source Control (Git) • PlatformIO • QT • Microcontrollers • Real-time Computing

EXPERIENCES

RESEARCH PROJECT — *ECASP Laboratory, Chicago, IL, USA*   *April - August 2021*
- Built an autonomous drone supporting embedded ML applications by augmenting its flight controller with a Jetson Nano.
- Implemented a secured gesture-control system on a drone by developing a pose classification and facial recognition pipeline, including a TensorRT neural network trained on a custom-made dataset.

MACHINE LEARNING RESEARCH INTERN — *Intelligent Robotics Lab, Birmingham, United Kingdom*   *June - August 2020*
- Created and curated a 11200 instances data set to improved human-robot communication with a TensorFlow neural network.
- Built an application in Python (QT) based on live video stream and real-time gesture estimation to ease labeled image capture.
- 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 - Mai 2020*
- Managed a 9-persons team over 10 months to create an autonomous robot competing in the French Robotic Cup.
- Developed a robotic framework in C++ to guarantee robust control and navigation on specialized hardware with various actuators.
- Coordinated parallel evolutions of mechanical, electrical, and software sub-teams to ensure smooth system integration.

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 visitors every 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 an error rate lesser than 1% through data-fusion of real-time vehicle signals and IMU.

Neural-Network Library Accelerator
- Accelerated frame-by-frame CNN inference process on CPU by more than 6 times compared to TensorFlow 2.0 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: Competitive FPS, Motorcycle, Photography, Technical writing (Towards Data Science contributor), Basketball.
- Native French speaker and fluent in English.