

JOSSELIN SOMERVILLE ROBERTS

Objective: Application for a Summer internship

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EDUCATION

- STANFORD UNIVERSITY**, California (USA) 2022 - March 2024
- Master of Computer Science (*My second master in CS*)
 - Relevant coursework includes: *Reinforcement Learning, Smart Product Design, Introduction to Robotic Design, Mechatronics, Deep Learning in Computer Vision*
- ECOLE POLYTECHNIQUE**, Palaiseau (France) 2019 - 2022
- Engineering diploma (Bachelor + Master in Computer Science) specialized in Image Vision and Learning
 - Relevant coursework includes *Advanced Machine Learning, Computer Vision, Design and Analysis of Algorithms* and *Algorithms for Data Analysis in C++* (Minor in Applied Mathematic)
- GPA: 3.93/4.0** (Ranked in the **top 7%** of the 2019 class)
- [PREPA PTSI/PT*] LYCEE JEAN-BAPTISTE SAY**, Paris (France) 2017 - 2019
- Undergraduate coursework includes *Topology, Algebra, Thermodynamics, Dynamics, Controls*
- GPA: 4.0/4.0 (Ranked 1st)** in the competitive exam to the *Grandes Ecoles* in PT with more than **2,500 applicants**

WORK EXPERIENCE

- RESEARCH SOFTWARE ENGINEER INTERN**, Paris (France) May - August 2022
Google (Research - Operations Research) - Vehicle Routing Team
- Invented a fast piece-wise linear regression algorithm for fixed number of segments (paper currently being reviewed for a future publication). For the same accuracy, the new method is about 300 times faster than the classic DP approach.
 - Invented and implemented a new MIP model to support traffic-aware Vehicle Routing Problems (VRP). The method relies on travel compression used in a post-solve step (heuristics).
- SOFTWARE ENGINEER INTERN**, Paris (France) June - September 2021
Zelros (Artificial Intelligence software provider startup for insurance companies) - Team Usage
- Developed widgets displaying recommendations that can be integrated into a web page with a single line of code, with full personalization, and security protocols in Javascript, AngularJS and NestJS.
 - Designed a security protocol to enable clients to access private data without having to log in with a Zelros account.
- SOFTWARE ENGINEER INTERN**, Montpellier (France) March - April 2020
Poligma (Statistics and Insights provider startup for political candidates)
- Built data ingestion pipelines for public institution data and designed ETL procedures using Python and MySQL.
 - Developed an algorithm to increase the granularity of geolocated data.

PROJECTS

Portfolio to be accessed at: <https://josselinsomerville.journoportfolio.com/>

- PROCEDURAL GENERATION OF DIALOGUES** 2020 - 2021
Procedural generation of dialogues for Non-Player Characters (NPC) in Video games – partnership with Ubisoft
- H-INDEX PREDICTOR** October 2021 - December 2021
H-index predictor using abstracts and a collaboration graph. Used NLP, and GNN. – Advanced Machine Learning final project
- IMAGE ANALYSIS AND COMPUTER VISION COURSE FINAL PROJECT** October - December 2021
Automatic placement of speech bubbles in TV shows, using mouth tracking, face recognition and a custom least obstruction and most pleasing algorithm.
- HEXAPOD SPIDER ROBOTS DESIGN AND CONSTRUCTION** 2017 - 2020
Personal project aiming to learn how to design walking robots. The final robot has 18 degrees of freedom and can move at 1.2 foot/s while carrying up to 14 pounds (nearly 3 times its weight) and climb obstacles up to half a foot
- LASER TAG EQUIPMENT DESIGN AND CONSTRUCTION** 2020 - 2021
Personal project aiming to build 16 targets and 8 guns to play laser tag. Created complex custom PCBs based around ESP32 microcontrollers to handle IR and WiFi communication, and electronics.

SKILLS

COMPUTER / PROGRAMMING / IT

- **Programming:** Python, C++, C, Java, Javascript, Typescript, AngularJS, NestJS, HTML, CSS, PHP
- **Databases:** Postgre, MySQL, SQLite, TypeORM
- **CAD:** SolidWorks, Fusion360 - **PCB design:** EasyEDA, KiCad - **Microcontrollers:** Arduino, ESP, Raspberry Pi, PIC32