

<p><b>Type of Contract:</b> permanent contract or fixed term contract for doctoral student <b>Workplace:</b> Ecully, France</p>	<p><b>Beginning of the contract:</b> ASAP <b>Remuneration:</b> to be defined</p>
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**JOB DESCRIPTION:**

- ⇒ Design / construction of artificial intelligence bricks, writing of design procedures and specifications, etc.
- ⇒ In collaboration with the President of the company, you will work on missions related to research and development of intelligence (communication and control) of an innovative public transport system.

**COMPANY DESCRIPTION:**

- ⇒ SUPRAWAYS is an innovative start-up incubated at the EM Business School in Lyon, which is developing a smart transport system.
- ⇒ SUPRAWAYS offers an efficient and environmentally friendly air transport system for passengers and freight.
- ⇒ Website : [www.supraways.com](http://www.supraways.com)

**« Joining us is taking part in the revolution of the urban transport of tomorrow »**

**MISSIONS :**

- ⇒ Set up, coordinate, lead and participate in R&D projects and design of a fleet management system of autonomous vehicles in real time:
  - Production of an audit of needs, data to be collected and existing methodologies,
  - search for the best design / implementation solutions for the intelligence of an innovative public transport system with a cost / benefit approach (data science and data-mining, learning machine, inter-vehicular communication, traffic and priority rules), speed management, V2I (vehicle to intelligence) communication, fleet repositioning, etc.,
  - ensure compliance of design / implementation rules with transport sector standards (conformity matrices with justification and explanation of deviations),
  - drafting specifications, roadmap and design / manufacturing procedures for system intelligence,
  - definition of the means to be implemented internally and externally,
  - Technical follow-up and coordination of service providers, suppliers and company partners in this area.
- ⇒ To help the development of different Artificial Intelligence bricks (database, block-chain, algorithms, machine learning machine),
- ⇒ Propose, develop and validate algorithmic modules related to environmental analysis, decision making and navigation of autonomous vehicles ;
- ⇒ Develop and model the algorithms ;
  - Receive, analyze and integrate algorithmic modules developed by the academic

- partners,
  - o Integrate and validate the modules in the demo vehicle, ...
  - o Conduct tests and validations,
  - o Analyze performance and propose changes,
- ⇒ Develop the minimum level of cybersecurity necessary for the authorities to approve the Supraways solution as an urban public transport solution,
- ⇒ Develop an active technology based on Big Data topics,
- ⇒ Write study reports and make recommendations for actions to be taken.

You will accompany the head of the studies department in:

- ⇒ bidding documents or search for funding,
- ⇒ The possible development of a multi-modal flow simulator, in collaboration with external experts.

### YOUR PROFILE:

With a strong appeal for innovative projects you are ready to invest in a high-stakes environment:

- ⇒ knowledge of the regulatory, legal and financial framework, of artificial intelligence, on national and European level;
- ⇒ technical skills related to artificial intelligence design / implementation studies, particularly in the transport sector;
- ⇒ knowledge of programming and modeling of complex systems;
- ⇒ Graduate with a Master 2 or an engineering degree in the fields of artificial intelligence, software engineering, robotics, computer science, applied mathematics and data analysis;
- ⇒ Minimum 3 years experience (except doctor) in project management in a design office or in a method department in the aforementioned fields;
- ⇒ excellent skills in technical English; another language would be an advantage;
- ⇒ excellent skills in Office or Apple equivalent packs;
- ⇒ excellent skills in software and computer language: Tensor Flow, Gradient boosting, Oracle, Python, R, JAVA, SQL, HTML, PHP, etc. ;
- ⇒ development skills: MATLAB, C / C ++, Python, LINUX, ROS, Git, RTMAPS, standard libraries (eg OpenCV, PCL);
- ⇒ Knowledge required: Mobile robots and / or autonomous vehicles in particular,
  - o Location: multi-sensor fusion, vision, lidar, radar, GNSS, RTK, odometry, IMU),
  - o Perceptions: Cloud point, multi-sensor fusion, detections, classification, object tracking,
  - o Navigation: Algorithms of the generations of the trajectories,
  - o Command-control: Design of control rules for tracking of tracks, kinematic models and dynamics of autonomous vehicles; decision architectures.
  - o learning machine (reinforcement, neural network, ..) and optimization (constraint satisfaction, optimization).
  - o Classification of information, and in the processing of image and signal.
- ⇒ personal and professional qualities: autonomy, accuracy, responsiveness, and excellent writing skills, teamwork, social skills and initiative, ability to integrate an international and multicultural environment.

We ask you to send us a letter explaining why you want to participate in the Supraways project, what are your motivations and how this project fits you.