Francesc Soriguera
Associate Professor

Jordi Girona 1-3, Office B1-114
08034 Barcelona (Spain)
Tel. (+34) 93 401 72 66
< francesc.soriguera@upc.edu >

PhD Position in Traffic Modelling & Simulation –Spring 2021

Facts Sheet:
Location: Barcelona
Department / Research Group: Civil and Environmental Engineering Department / BIT-Barcelona Innovative Transport (https://bit.upc.edu/en)
Contract: 3 years
Hours: 37.5 hours per week
Salary: 17.785 € per year gross
Education: Master degree
About employer: Universitat Politècnica de Catalunya (UPC – BarcelonaTech)
Short link to the announcement: https://fsoriguera.com/ (click on PhD position 2021).
Closing date: February 28th, 2021

Position Summary: The Barcelona Innovative Transport (BIT) research group in the Department of Civil and Environmental Engineering at the *Universitat Politècnica de Catalunya* (UPC-BarcelonaTech) invites applications for a PhD position in traffic modelling and simulation. The position should be covered during next spring 2021 in the area of microscopic modeling of autonomous vehicles. The selected candidate will be hired temporarily for a maximum duration of 3 years, or until he/she receives a 3-year PhD fellowship from any national or international program, to which he/she will be encouraged to apply.

Research group summary: The BIT research group (https://bit.upc.edu/en) works in several topics in the transportation engineering field, ranging from transport operations to city planning. The candidate is expected to join the sub-group led by Prof. Francesc Soriguera (fsoriguera.com) whose main research directions currently focus on the analysis of freeway traffic and on the modeling of vehicle sharing systems in urban mobility. In the freeway traffic operations research field, Dr. Soriguera has worked in travel time estimation, the effects of dynamic speed limits, and has conducted real life experiments in the Barcelona Highway Lab. Currently, the focus of Dr. Soriguera's research moved towards the interaction between connected autonomous and traditional vehicles in freeway traffic.

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Primary Responsibilities: The candidate will work in the design of new microscopic traffic models to assess the effects and interactions of autonomous cars in freeways. Specifically, the model should reproduce vehicle platooning strategies in order to make traffic flow more efficient and sustainable. Additionally, the successful candidate will assess the effects of platoons on the overall flow, composed by a mixed traffic of autonomous and traditional vehicles. This research needs to be made with the higher quality standards in order to be published in top tier scientific journals in the field. The final goal will be to complete a PhD thesis. This work will be under the direct supervision of Dr. Soriguera.

Requirements

- To hold a master degree in engineering, mathematics or physics.
- High interest in transportation engineering, urban mobility and specifically in traffic related research.
- Strong computer coding skills to process data and implement models.
- Excellent English communication skills. Spanish will be appreciated.
- Some experience or knowledge in transport modeling methodologies.
- Experience using traffic simulation tools as AIMSUN, VISSIM, VISUM, etc. will be appreciated.
- The candidate will apply to be admitted in the Civil Engineering PhD Program at the UPC. Only if he/she is accepted will be hired.

Application Submission:

To apply please send the following documents to francesc.soriguera@upc.edu along with a letter of application in a single PDF file entitled "PhD_PLATOON_Lastname.pdf"

- Download and fill the following form: PhD Application Form
- A detailed CV/resume
- Proof of English language proficiency
- Abstract of your MSc thesis (max 1/2 page)
- 1 page describing your ideas of an approach and methodology to assess the impact of autonomous cars in freeway traffic efficiency, elaborating on data and modelling aspects, if possible.
- Recommendation letters may be asked during the selection process. They are not necessary at this stage, but you may add them if already available.