Bofei CHEN

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Education

Université de technologie Belfort-Montbéliard(UTBM)   *Belfort, France*

PhD in Computer Science   *Oct. 2013 - Feb. 2017*

- Thesis: *A multi-agent based cooperative control model applied to the management of vehicles-trains*

Harbin Engineering University(HEU)   *Harbin, China*

Master in Control Theory and Control Engineering   *Oct. 2010 - Mar. 2013*

- Final project: *Research on thruster assisted position mooring*

Bachelor in Detection, Navigation and Control Technology   *Sep. 2006 - Jul. 2010*

- Final project: *Development of ship motion control joystick system*

Experience

VEDECOM Integrated PRT Simulator (VIPSim)   *VEDECOM*

Research & Development Engineer   *Apr. 2017 – July 2021*

- **Develop** VIPSim: a sharing transportation simulation & management system
- Implement GUI module including menu bar, inspecting vehicle information, showing simulation result under Qt in C++
- Implement Simulation Engine module including traffic network, **path planning in Dijkstra's algorithm**, vehicle manage, passenger manage, record simulation data under Qt in C++
- **Unittest** module efficiency before integration to upper level system
- **Implement traffic network:** extraction, restructure and improvement OSM information under script, SUMO, netedit, UML
- Research and Implement **vehicle mathematics model**: vehicle dynamic model, vehicle following model and consumption model
- **Document** the building, deploying and using of VIPSim under Markdown

Multi-agent cooperative control for vehicles management   *IRTES-SeT, UTBM*

PhD candidate & Research Assistant   *Oct. 2013 – Feb. 2017*

- Developed one **multi-agent model** as the logical represent of intelligent vehicles
- Raised the vehicles-train concept as one assistant to vehicle formation/platoon control
- Defined the interaction model and communication flow between intelligent vehicles
- Implemented a **cooperative control** method based on multi-level decision for vehicles management

Research on thruster assisted position mooring control system   *BestSea Assembly Institute (BSA), HEU*

Master candidate   *Oct. 2010 – Mar. 2013*

- Modeling the mooring ship simulation system in Matlab
- Implemented Unscented Kalman Filter and a nonlinear integrator back-stepping controller

Skills

Programming	C/C++, JAVA, Python, QML, JavaScript	**Tools**	Git, LaTeX, Matlab, Qt, UML, SUMO
Languages	Chinese (Native), English (Fluent), French (Medium)	**Other**	TensorFlow, Gazebo, ROS

Publication

- Bofei CHEN, and Franck GECHTER. "A Cooperative Control System for Virtual Train Crossing." International Conference on Artificial Intelligence: Methodology, Systems, and Applications. Springer International Publishing, 2016.

- Bofei CHEN, Baudouin DAFFLON, Franck GECHTER and Abderrafi KOUKAM. "Vehicles virtual train management at crossroads and roundabouts." The 7th International Conference on Logistics and Transport, 2015.

- Bofei CHEN, Franck GECHTER, and Abderrafiaa Koukam. "Multi-level decision system for the crossroad scenario." Procedia Computer Science 51 (2015): 453-462.

- Dafflon, B., Chen, B., Gechter, F., and Gruer, P. . "A self-adaptive agent-based path following control Lateral regulation and obstacles avoidance." 2014 International Conference on High Performance Computing & Simulation (HPCS).

Certifications

Self-driving Car Engineer, Udacity   *Sep.2021*

Machine Learning, Coursera   *May.2020*

Motion Planning for Self-Driving Cars, Coursera   *Apr.2020*