



From the Perspective of Education: How to “Raise” Big Transportation Models “in a Well-Rounded Way”

Recently, I met a high school student and talked about various popular big artificial intelligence (AI) models, such as big language models, big transportation models, big medical models, and others. After listening to me, she said with a slight hesitation, “Oh, once again, humankind is using their striking power to lay ‘education’ and ‘employment’ on poor silicon-based ‘children.’” Obviously, big models are compared to “children,” environments producing large models to “schools,” and application scenarios to “universities” or “colleges.” Big models first go to “primary and secondary schools” to learn “basic subjects,” such as common sense and languages, then go to “universities” or “colleges” for further studies in specific majors. However, silicon-based “children” can learn and evolve unimaginably faster. “Considering lectures from human education, please make sure to let silicon-based ‘children’ grow up in a well-rounded way!” she emphasized at the end of the conversation.

The student’s last words did touch me, leading me to start thinking about the cultivation of big AI traffic models from the education perspective. As we all know, human education is a systematic process; therefore, only under correct value frameworks and appropriate competition mechanisms, in open learning environments and multidimensional evaluation systems, through systematic curriculum systems and challenging learning tasks, plus real-time teachers’ guidance and instructions, can children grow up comprehensively. The same applies for big AI traffic models, one kind of silicon-based “children,” “born” to be engineers and experts in the transportation field. Only under “human-centered” transportation ethical frameworks, on open source-based learning platforms and confrontation games-based exercising platforms, through curriculum systems covering various common sense, basic big data, and professional big data in transportation, upon challenges of various professional scenarios and tasks, plus real-time feedback and interactions from human, can they achieve healthy development.

Physical and Mental Development vs. Coordinated Development of Hardware, Software, and Computing

We need to work on not only algorithms running in all levels of traffic management and control and big data covering professional traffic data and traffic common sense (compared to “advanced thinking” of human), but also on the development of underlying system hardware, such as chips from lightweight to specialized (“physical fitness”) and effective coordination of system hardware, system software, and algorithms (“mind-body integration”). Reasons for the success of ChatGPT lie in not only excellent data annotation, advanced software algorithms, and optimization of engineering processes, but more importantly, overall systematic and mutual collaborations among application

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Cristina Olaverri-Monreal 

PRESIDENT'S MESSAGE

A Tribute to Women in the Field of Intelligent Transportation Systems

It is truly remarkable how women have persevered in male-dominated fields, such as the field of intelligent transportation systems (ITS). Despite the progress made in recent decades, women remain underrepresented in this field, which has negative consequences that hinder innovation, limit the diversity of perspectives, and perpetuate gender stereotypes.

Women represent more than half of the workforce and have demonstrated how their invaluable perspectives, experiences, innovative ideas, multidisciplinary approaches, problem-solving skills, and insights into research and development, are essential to the progress and evolution of many fields. The fact is, women bring unique and valuable perspectives to the table, and they must have access to equal opportunities to contribute to the research and development of ITS.

The successes of women in male-dominated fields are all too frequently disregarded, and holding leadership positions does not always ensure their equal career advancement and recognition. Women often encounter obstacles in forming professional networks and establishing relationships, making it difficult to break through the glass ceiling.

As the first woman to be elected as president of the IEEE Intelligent Transportation Systems Society (ITSS), I am deeply honored to serve as a role model for other women in this field. Women can succeed in this historically male-dominated field and open doors for other women to pursue the same career path. In my role as president of ITSS, I hope to inspire and empower other women to envision themselves as scientists and innovators in intelligent transportation and vehicles research.

It is time for our ITSS to take action and promote gender diversity, equality, and inclusion. This requires a significant increase in the number of women in governing positions and as members. We must work together to address systemic barriers, such as unconscious bias and gender-based stereotypes, to ensure that all voices are heard and valued.

In this context, the ITSS Ad hoc Committee on Women and Underrepresented Groups (Wi-ITS) was recently launched to inspire and support women in this field. The committee aims to provide a platform for professional and leadership growth and promote the visibility of women and other underrepresented groups in ITS. The ultimate goal is to extend interest in the ITS field among female students to

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