

Industrial & Systems Engineering

Seminar Announcement

Cognitive Workload of In-Vehicle Voice Control Systems

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Industrial & Systems Engineering

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Abstract: In-Vehicle Information Systems (IVIS) are becoming more accessible to drivers and contain more complex communication features. Voice control systems (VCS) promise to be less distraction than visual-manual interfaces, but they can still impose cognitive workload. This study examined the impact of VCS interaction on driver's cognitive workload using the Tactile Detection Response Task (TDRT) protocol. A driving simulator study with 48 participants was conducted using an interface with a Wizard-of-Oz based voice control system. Drivers conducted several voice tasks that included radio channel selection, address navigation, and scheduling a calendar appointment. Each task varied in terms of recognition accuracy and time delay. The study identified shortcomings of the TDRT protocol for evaluating VCS.

Bio: *Chun-Cheng Chang* is a PhD student in the department of Industrial and Systems Engineering. Prior to joining University of Washington, he received his B.Sc at Rutgers University in Piscataway, NJ.

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