Monjurul Hasan

PhD Student, University of Alberta, Canada

Monjurul Hasan is a PhD student at the Department of Civil and Environmental Engineering of University of Alberta, Canada and working as a Graduate Research Assistant in Dr. Ming Lu and Dr. AbouRizk's research group. Previously, Monjurul graduated from the same university with an MSc degree in 2018. He is developing his research in the field of applying smart computing systems for construction automation, process planning, visualization, and optimization. As an author/coauthor, Monjurul has so far published 14 research papers (journals and conference proceedings) in CEM domain. In recognition, he has received several awards for his outstanding research contributions.

At present, as a PhD researcher, Monjurul is working with several industry partners (e.g. CPCI, EPCOR, Supreme Steel, and Government of Alberta). His research is primarily focused on developing new generation planning/scheduling frameworks for the industry. Most of the construction process planning methods primarily rely on human expertise to transform the practical processes into a CPM network. Afterward, different visualization tools (e.g. P6, MS Project) are used to transform those mental model output into a nice readable schedule. Current method of Critical Path Method (CPM) scheduling deemed to be -highly inefficient in terms of handling multiple activity predecessor relationships for a single activity. Whereas, in practical, a numerous amount of activities need to be performed to complete one construction process. Planning such process/operation is complex and time consuming. Monjur is trying to develop an innovative solution to this problem through applying discrete event simulation and an optimization algorithm to find the best possible plan.