Technological advancements in the last century have changed the world we live in. The use of machines and devices in everyday human life is assigning them a new societal role. Envisioning the machine to act as an educator, helper, supporter, mediator, negotiator, moderator, doctor, and a daily companion is the debate of the day. Emergence of such a socio-technological world has brought many challenges to technologists and social scientists. A main question that still stands is whether such a societal setup will be stable.

To make such a setup stable and successful machines, should be made human-aware. To that, the models representing human behaviour should be designed, verified, validated and embedded into them. These models will enable the machines to understand and forecast human behaviour and to adapt and support accordingly. Human trust being the fundamental human behaviour that determines all of the human activities performed in daily life should be known to the machines to qualify as human-aware. This dissertation deals with design, verification and validation of models for human trust dynamics, which is being advocated as an essential component for human-machine interaction posed under the challenges of the postmodern human society.

Analysis and Validation of Models for Trust Dynamics

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