**Applied Cognitive Science (ACS) Lab**

**Introduction**

The Applied Cognitive Science (ACS) Lab at the Indian Institute of Technology Mandi was established in 2014 by Prof. Varun Dutt. The main focus of the lab is to investigate decision making and cognition in applied domains. Some of these domains include our environment, consumer behavior, cyber security, vehicle driving, natural disasters, and gambling etc. In these domains, people make multiple, interdependent, real-time decisions in response to both external stimuli and their prior decisions. Our research methodology includes conducting laboratory experiments where we collect human behavioral data using simulation games (also called “microworlds”) and we use computational cognitive models based on the cognitive ACT-R architecture and other approaches to understand and predict such behavior. The lab is concerned in answering the following general questions: How does one’s experience influences one’s decisions? How certain kinds of experiences improve decisions and adaptation? How experience gathered in one situation performs in newer situations?

Our results and conclusions extend to applied domains. For example, our conclusions may help understand the effects of existing designs on human cognition and how improvements to existing designs could enhance cognition. Our research could also help in developing training interventions in varied applied domains. For example, training security analysts against certain kinds of cyber-attacks could help improve their performance. Our laboratory consists of post-doctoral fellows, graduate and undergraduate students, and student interns. The lab members come from different fields which include computer engineering, electrical engineering, and humanities and social sciences.

In summary, the ACS Lab is involved in studying human behavior by observing and collecting human performance in microworld tasks. Furthermore, it is also involved in developing cognitive models that reproduce observed behavior and predict new unobserved behavior within similar tasks.

**Contact:**

Dr. Varun Dutt

Assistant Professor and Principle Investigator

Applied Cognitive Science Lab

O-11, Academic Building, Paddal Ground

Indian Institute of Technology Mandi

Mandi, Himachal Pradesh, India - 175001

Phone: +91-1905-267041/237932

Email: [varun@iitmandi.ac.in](mailto:varun@iitmandi.ac.in)

URL: <http://faculty.iitmandi.ac.in/~varun/>