

# Intelligent User Interfaces: An Introduction

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## ABSTRACT

*Intelligent user interfaces* (IUI) aim to improve human-machine interaction by representing, reasoning, and intelligently acting on models of the user, domain, task, discourse, and media (e.g., graphics, natural language, gesture). IUIs are multifaceted, in purpose and nature, and include capabilities for multimedia input analysis, multimedia presentation generation, and the use of user, discourse and task models to personalize and enhance interaction. Some IUIs support asynchronous, ambiguous, and inexact input through analysis of multimodal input. Others include animated computer agents that express system and discourse status via facial displays, that tailor explanations to particular contexts, or that manage dialogues between human and machine.

Potential IUI benefits include:

- More *efficient* interaction -- enabling more rapid task completion with less work.
- More *effective* interaction -- doing the right thing at the right time, tailoring the content and form of the interaction to the context of the user, task, dialogue
- More *natural* interaction -- supporting human-like spoken, written, and gestural interaction.

Drawing upon material from *Readings in Intelligent User Interfaces* (Maybury and Wahlster, 1998), this tutorial will define terms, outline the history, describe key subfields, and exemplify and demonstrate intelligent user interfaces in action.

## REFERENCES

1. Maybury, M. and Wahlster, W. (eds.) 1998. *Readings in Intelligent User Interfaces*. Morgan Kaufmann: Menlo Park, CA. ([http://www.mkp.com/books\\_catalog/1-55860-444-8.asp](http://www.mkp.com/books_catalog/1-55860-444-8.asp))