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Abstract : Due to the tremendous progress in computer technology in the last decades, the capabilities of computers increased enormously and working with a computer became a normal activity for nearly everybody. With all the possibilities a computer can offer, humans and their interaction with computers are now a limiting factor. This gave rise to a lot of research in the field of HCI (human computer interaction) aiming to make interaction easier, more intuitive, and more efficient. To research eye gaze based interfaces it is necessary to understand both sides of the interaction–the human eye and the eye tracker. The first section gives an overview on the anatomy of the eye. The second section accuracy and calibration issue. The subsequent section presents data from a user study where eye movements have been recorded while watching a video and while surfing the Internet. Statistics on the eye movement during these tasks for several individuals provide typical values and ranges for fixation times and saccade lengths and are the foundation for discussions in later chapters. The data also reveal typical limitations of eye trackers.