

## **BIPED LOCOMOTION: STABILITY, ANALYSIS AND CONTROL**

Prahlad Vadakkepat and Dip Goswami

Abstract- In this paper, researches and advances in biped locomotion are reviewed. A detailed survey is presented describing the various research problems and the approaches reported in the literature to analyze and control biped locomotion. A method of Zero-Moment-Point (ZMP) compensation is discussed to improve the stability of locomotion of a biped which is subjected to disturbances. A compensating torque, computed from the force sensor reading, is injected into the ankle-joint of the foot of the robot to improve stability. The effectiveness of the method is demonstrated on a humanoid robot, MaNUS-I, to reject disturbances of various form.