Pegasus

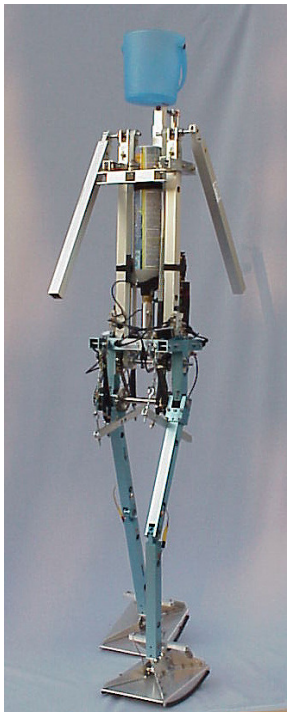
In nature, the vast majority of animals use legs, regardless of whether they hop across vast plains (kangaroo), run through dense jungles (tiger) or climb mountains (chamois). Although we humans utilize these same dynamics, fully understanding and reproducing this phenomenon that nature has already optimized has till now eluded us. Robots using legs have the unique attribute of enabling relatively high speed and efficiency, while allowing movement across all sorts of terrain, as opposed to wheeled vehicles which, while being extremely fast and efficient, generally require a prepared track. In the past decade, several advances in legged robotics have been made, such as the BigDog, an extremely robust quadruped able to traverse very rough terrain, or the Cornell Ranger, which holds the record for the longest walking distance of 23 kilometers.

ALOF Robot ETH Zürich

Goals

Project Pegasus aims to tackle a new challenge: create an autonomous robot capable of running for **10 kilometers**, thereby combining **high speed** with high efficiency by exploiting the dynamics of running, a gait that has so far not been implemented with great success due to the complications created by ballistic flight.

The breakthroughs in this field could lead to important applications in many fields, from speedy couriers and "pack-animal" robots which can assist in rough environments, such as in catastrophe areas or under-developed regions, to a better understanding of bio-mechanics and improvements in prosthetics and rehabilitation robots, and even in improving the natural look of socially interactive robots.



TU Delft Denise

Team

Project Pegasus is a collaborative project between two of the top European engineering universities, ETH Zurich of Switzerland and TU Delft of the Netherlands. During the entire final year of their Bachelor studies, the 10 mechanical engineering students (6 from ETHZ and 4 from TUD) composing the project team will work in tight collaboration, the first semester in Switzerland and the second in Holland. In this time, the team will undertake all aspects of the project, both technical, from design and development to prototyping and testing, as well as administrative, such as finances and public relations.

This special collaboration will allow the students to learn first-hand what it's like working on an innovative project in an international team, as well as experience living in a different culture, while bringing their respective strengths together to form a unique synergy.

Team Pegasus