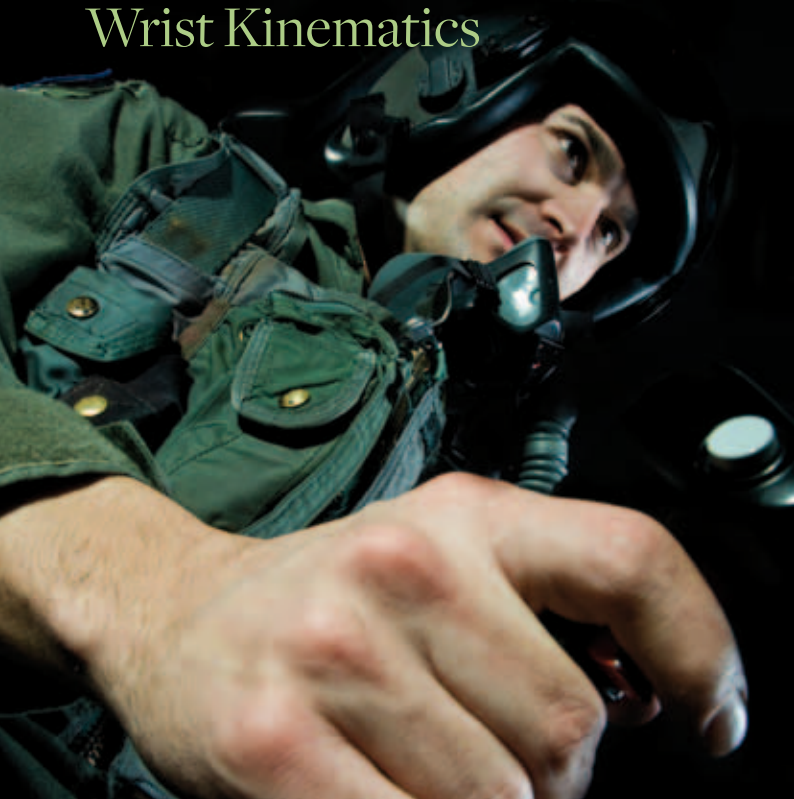


Optimising human
performance and skill.

HAWK: Hand and
Wrist Kinematics



HAWK is a unique and comprehensive platform technology that utilises a complex set of integrated algorithms to analyse the composite movements of the wrist, hand, fingers and thumb. It is the first technique to accurately measure all these dynamic movements.

The technology can be utilised to understand how the hands move to complete functional tasks. Using this information, interactions between a human operator and an interface can be characterised. This information has the ability to lead to innovations in optimising performance and complex interface design within a range of applications.

HAWK receives three-dimensional coordinates of a number of fixed points, for example a motion capture system, and can accurately measure to less than one degree all the dynamic joint information of the hand and wrist.


Technological advantages of HAWK

- The only comprehensive measure of dynamic human hand function
- A three-dimensional solution space
- Validated for accuracy and reliability
- Accurate to less than one degree

The University is looking to partner with companies to develop this technology or use this technology to help develop innovative products for industry. We can partner through collaboration and licensing, or through consultancy using our state-of-the art motion capture facilities.

Partnership development opportunities

- Ergonomics and interface interaction
- Designing fluid interactions in complex environments
- Precision and accuracy in end-effector robotics
- Precision gesture interface technologies
- Simulation quantification and performance measurement
- Gaming (integrating realistic hand models into gaming platforms)



Precision and accuracy in complex skill acquisition

The versatility of HAWK allows us to collaborate across industrial sectors. Current areas of collaboration include Hocoma (rehabilitation robotics), Roke Manor Research (validating markerless measurement systems), Blüthner UK (piano manufacturer) and Winchester School of Art (sculptures).

The University of Southampton is one of the world's leading entrepreneurial universities, with an impressive track record as a partner to business and the public sector, and as a source of invention and innovation. Find out how your business can benefit from technological research being developed by the Faculty of Health Sciences.

For further information on the HAWK technology, please see www.southampton.ac.uk/healthsciences/about/staff/cheryl_metcalf.page?#research and www.cherylmetcalf.co.uk/hawk.php

For further information on collaboration, partnership, commercialisation and licensing of the HAWK technology, please contact: Dr Cheryl Metcalf
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