



Pushing what's possible in sprints and endurance running

Nike and HP have been pushing the envelope of what's possible in both sprinting and endurance running with the rapid prototyping of 3D-printed shoes.

Eliud Kipchoge, the world's fastest marathon runner, won the 2018 London Marathon wearing 3D printed "Flyprint" shoes from Nike and HP while Allyson Felix has been testing the Nike Zoom Superfly Flyknit spikes.

The custom spikes developed for Felix were part of an initiative to drive down the time to produce custom shoes. HP and Nike have been using the same technology to produce custom football cleats for NFL teams

Kipchoge aims to be the first person to run a marathon in under 2 hours. His shoes' upper portion is made from a 'flyprint' of 3D printed threads of polyurethane. Each thread is less than a millimetre thick and spans the shoes't length, printed with solid deposit modelling.

3D and pressure scans of Kipchoge's feet influence the design of wave-like patterns on the shoe upper's mesh.

The ways in which the threads build the shoe upper are uniquely adapted to the runner's feet. Each can be printed in 30 minutes with the ability to control the precise length, curvature and diameter of threads.

MODIFIED SHOES WERE PRINTED AND SENT TO KENYA FOR KIPCHOGE WITHIN NINE DAYS

Tom Clarke, President, Nike Innovation, said, "At Nike we innovate for the world's best athletes. We've been using 3D printing to create new performance innovations for footwear for the past several years. Now we are excited to partner with HP to accelerate and scale our existing capabilities as we continue to explore new ways to manufacture performance products to help athletes reach their full potential."

Next season, players from 32 NFL teams will receive custom 3D printed cleat shoes from HP. The shoes will be 3D printed using 3D scans and body data from players.