A New Design Experience For 3D Printed Footwear

Overview
This project was conducted to explore and affirm the relationships between the Mechanical property of Adidas' 3D printed mid-soles and the emotive responses of consumers who would wear these shoes. The relationships confirmed through this capstone will help designers and engineers at Adidas design footwear that meets consumer demands.

Problem statement
How might we take the natural language used by consumers and athletes to talk about desired footwear function and interpret this into an engineered product?

Research
Both HCDE and ME team researched on different aspects of this problem and connected users feedbacks and mechanical properties.

1. HCDE
   - We started with a simple question: What would engineers want on Adidas team?
   - We conducted 6 interviews with Adidas engineering team
   - Interview users
   - We interviewed 30+ consumers
   - Consolidate natural language keywords

2. ME
   - What are the possible lattice structures?
   - How would you define wearing experience?

3. Touch testing data collection
   - We used 5 main natural language keywords into our touch testing
   - Correlations Between natural language keywords and mechanical properties

Solution
We discovered correlations between natural language keywords and mechanical properties

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What's next...
We documented data on an Excel sheet that will be available to Adidas engineers to choose. We also designed a user-friendly interface for potential development.