

Contour

The right fit for you

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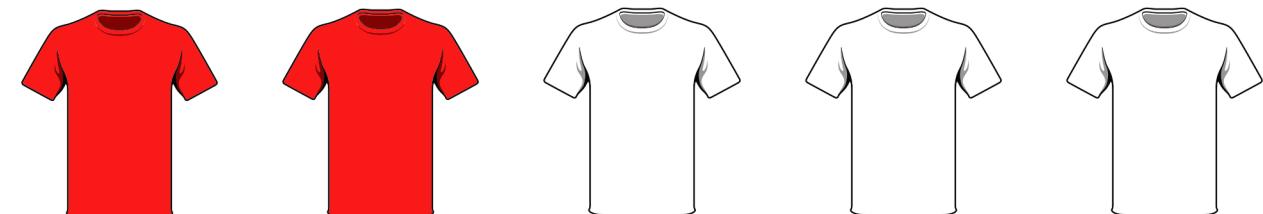
Advisor: Alex Wong

Background

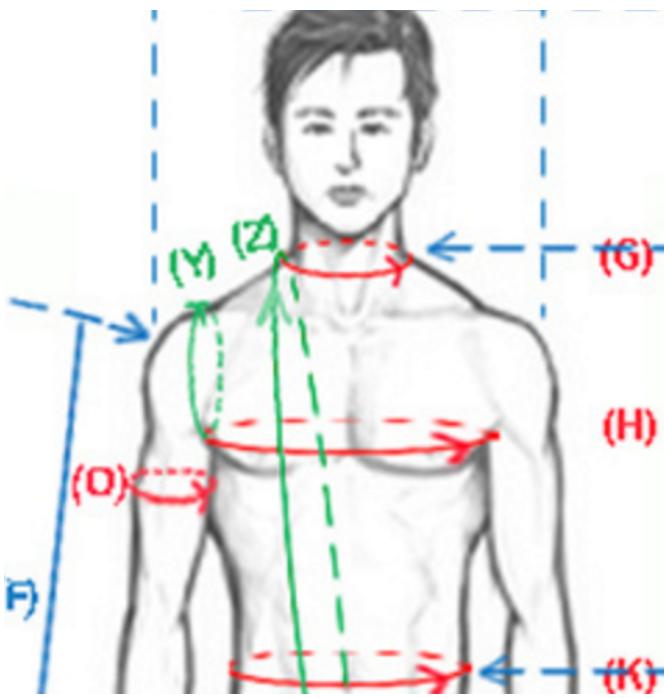
Customers are hesitant to buy clothes online, unsure if purchased clothes will fit [1]

Packaging and delivery account for 54% of the overall environmental impacts of online shopping [2]

40% of all clothes purchased online are returned [3]

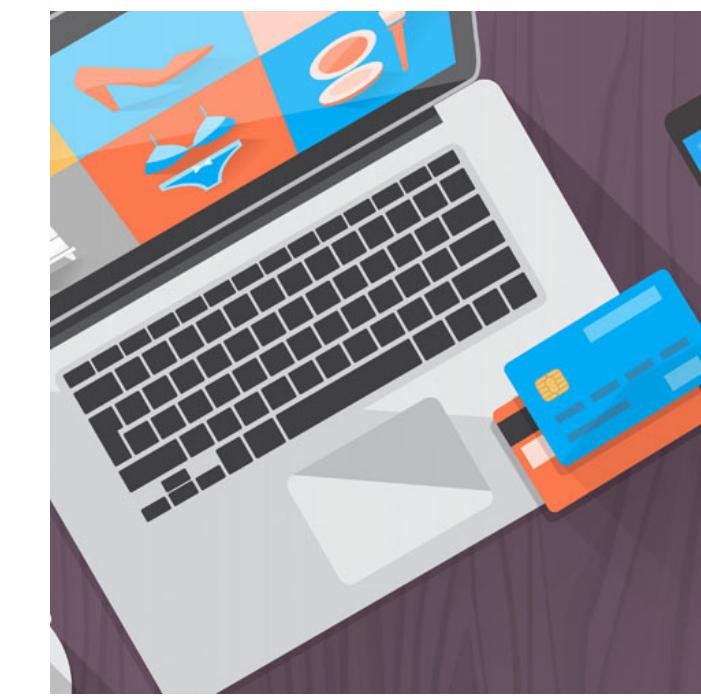


Scope



Phase One

Acquire User Measurements



Phase Two

Integrate Measurements into Online Shopping

18 - 35 year olds: 52% of online clothes shoppers [4]

Males only, to reduce body type variability

Only neck, chest, and waist measurements needed

Objectives

Phase One

- Max of 5% measurement error, 95% of the time
- Max of 5 minutes to obtain measurements

Phase Two

- Comply with data privacy regulations
- Maintain a user profile
- Implement a rating/feedback system
- Inexpensive for end user
- Allow non-baggy clothes during measurement
- Compatible with existing online retail systems

Impacts

Lower pollution from returns

Detailed trend and preference data

Increase ease of access

Retailer Contact

Contacted 40 different retailers, clothing returns cited as a major source of revenue loss

Phase One Low-Fidelity Testing

Post Purchase Tailoring

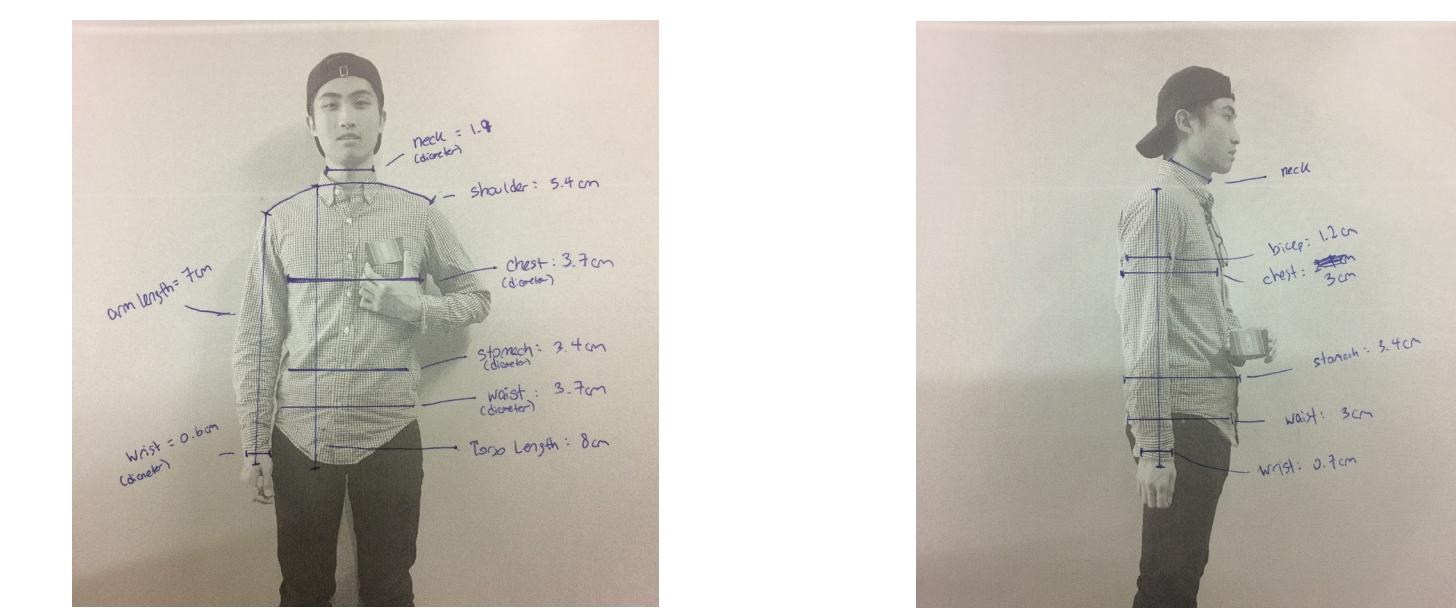
2D Body Scanning

Customer Contact

Surveyed 60 online shoppers. 85% had problems with fit. Fisher test found strong correlation between fit and satisfaction

75% favoured

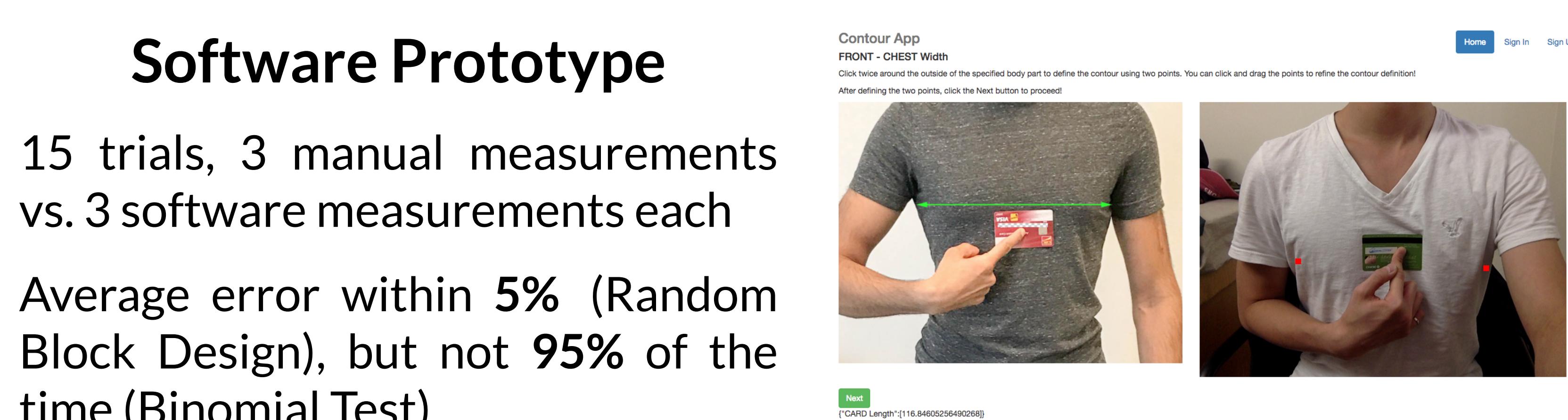
Image Recognition



Software Prototype

15 trials, 3 manual measurements vs. 3 software measurements each

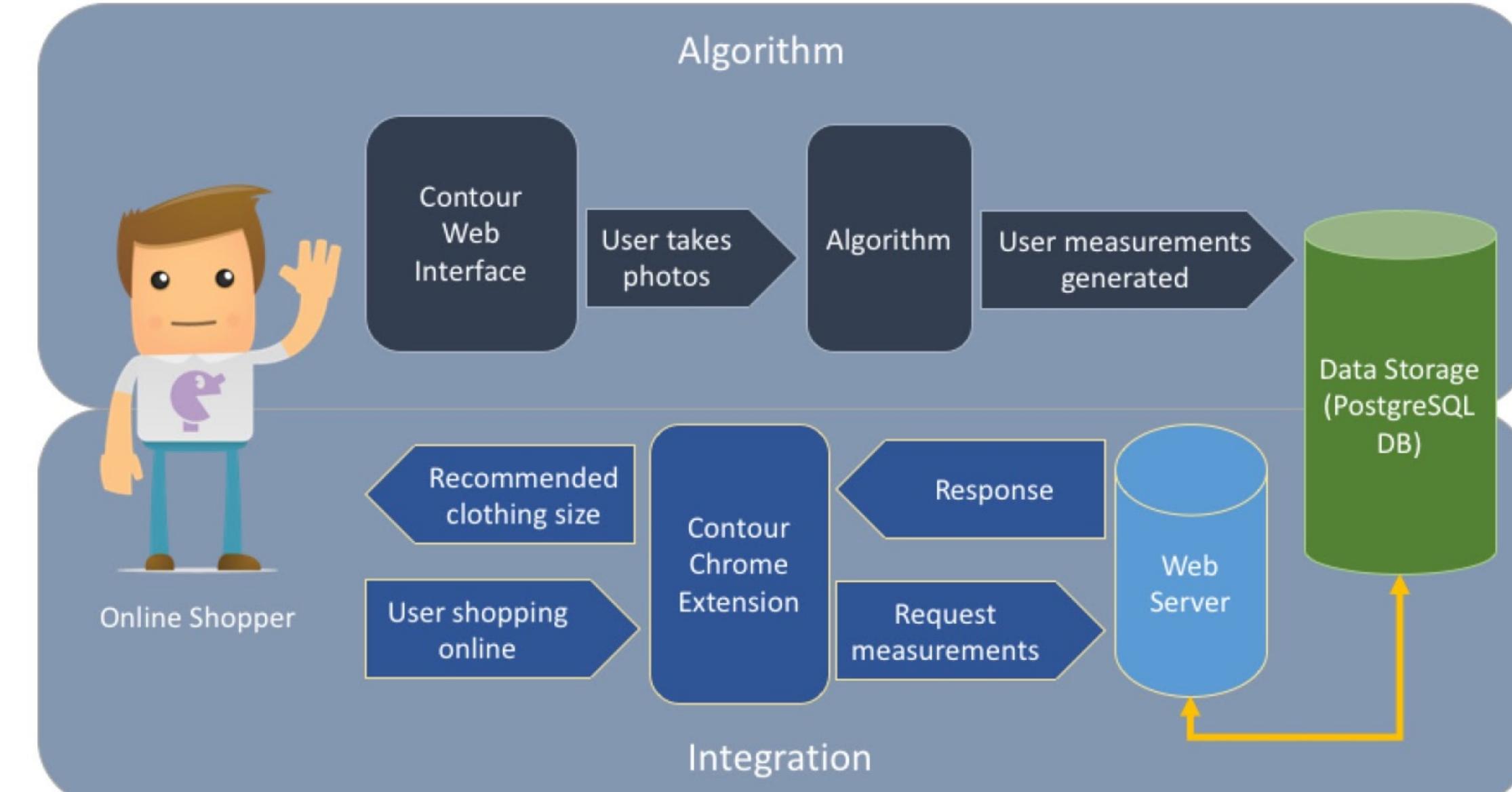
Average error within 5% (Random Block Design), but not 95% of the time (Binomial Test)



Manual Testing

Model body segments as ellipses
3 users, credit card as scaling tool
Error ranged between 1% and 14%

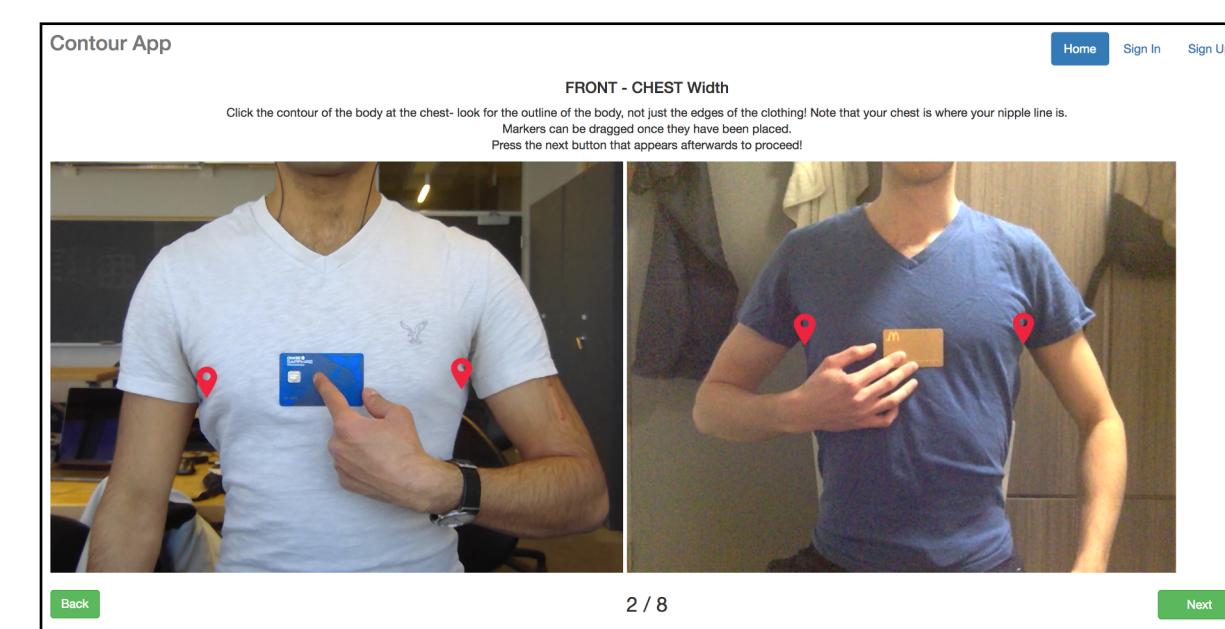
System Diagram



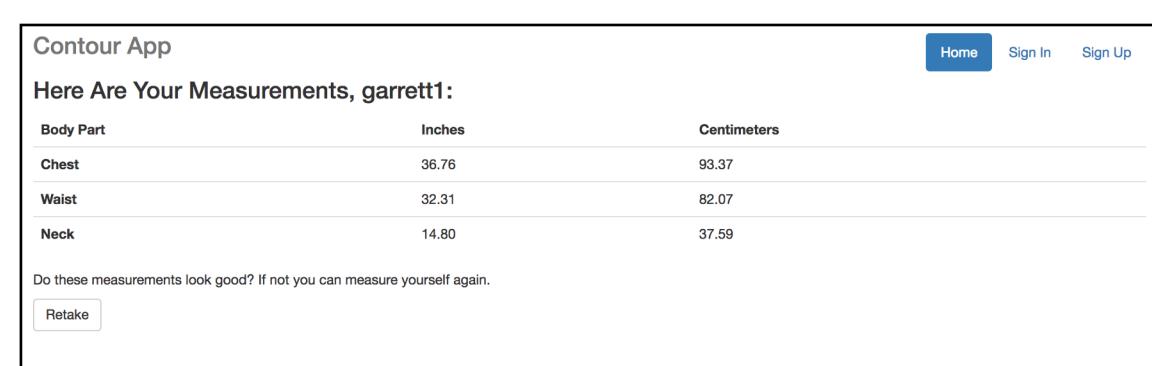
The Contour web application is powered by Flask and uses PostgreSQL for data storage. The Contour Chrome extension accesses data using Ajax POST requests to generate measurements.

Designed Solution

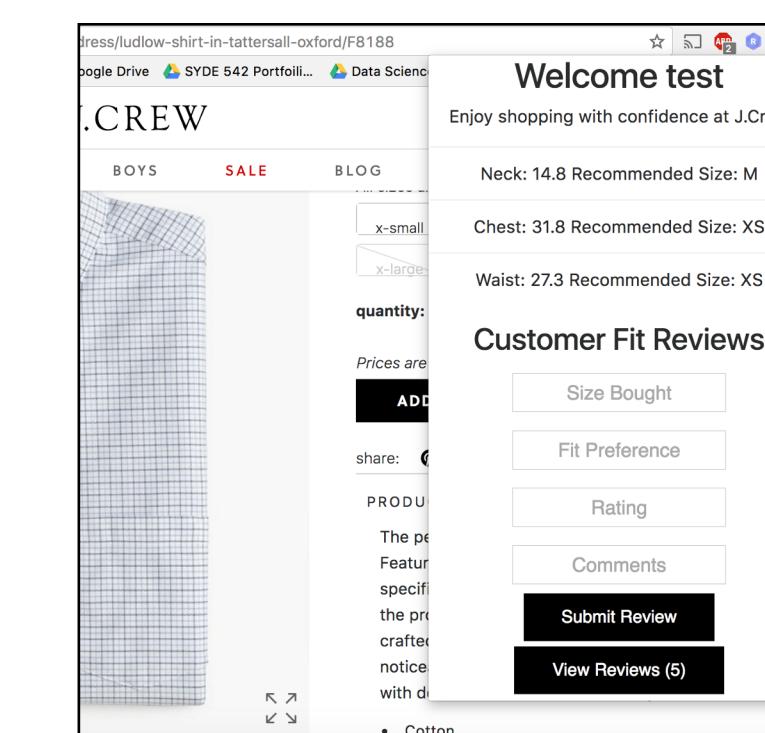
User takes photos of their body and defines measurement contours



Measurements are presented to user and are stored in database

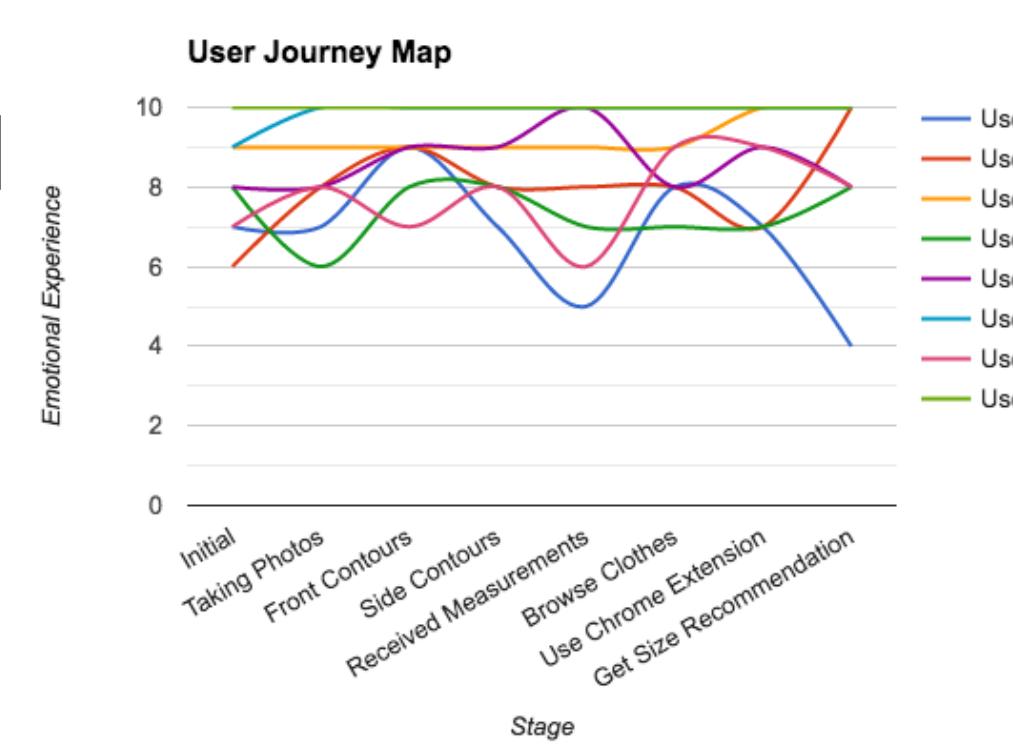


Chrome extension provides recommended size with just one click!



End-to-End Testing

- Users were satisfied with all stages of use
- System satisfied all requirements except the consistency requirement



Retailer-Side Integration

Chrome Extension

Front-End Website

85% favoured

Experiment 3: Feedback/Rating System

A feedback and rating system was implemented in efforts to combat incorrect orders and mitigate customer returns