

MICHIGAN STATE
UNIVERSITY

Beta Presentation

FIBRE: Fabric Identification Based Recommendation Engine The Capstone Experience

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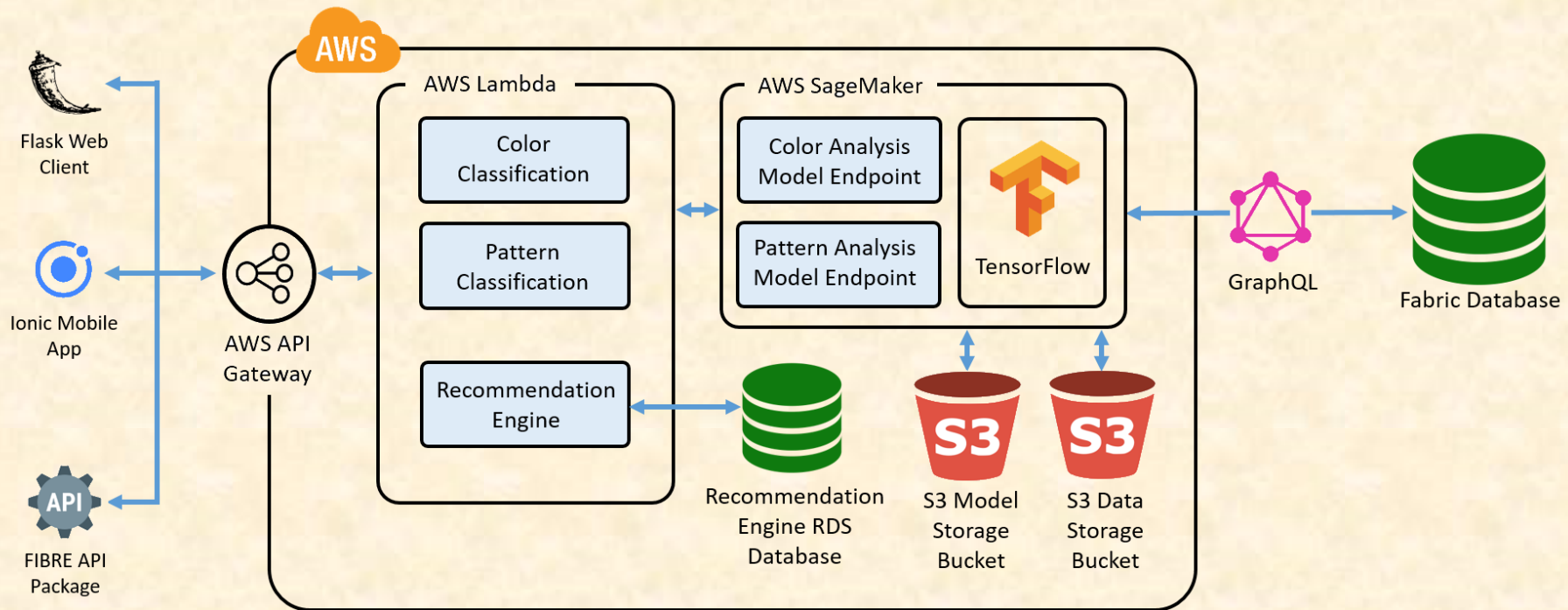
*From Students...
...to Professionals*

Department of Computer Science and Engineering
Michigan State University
Fall 2018

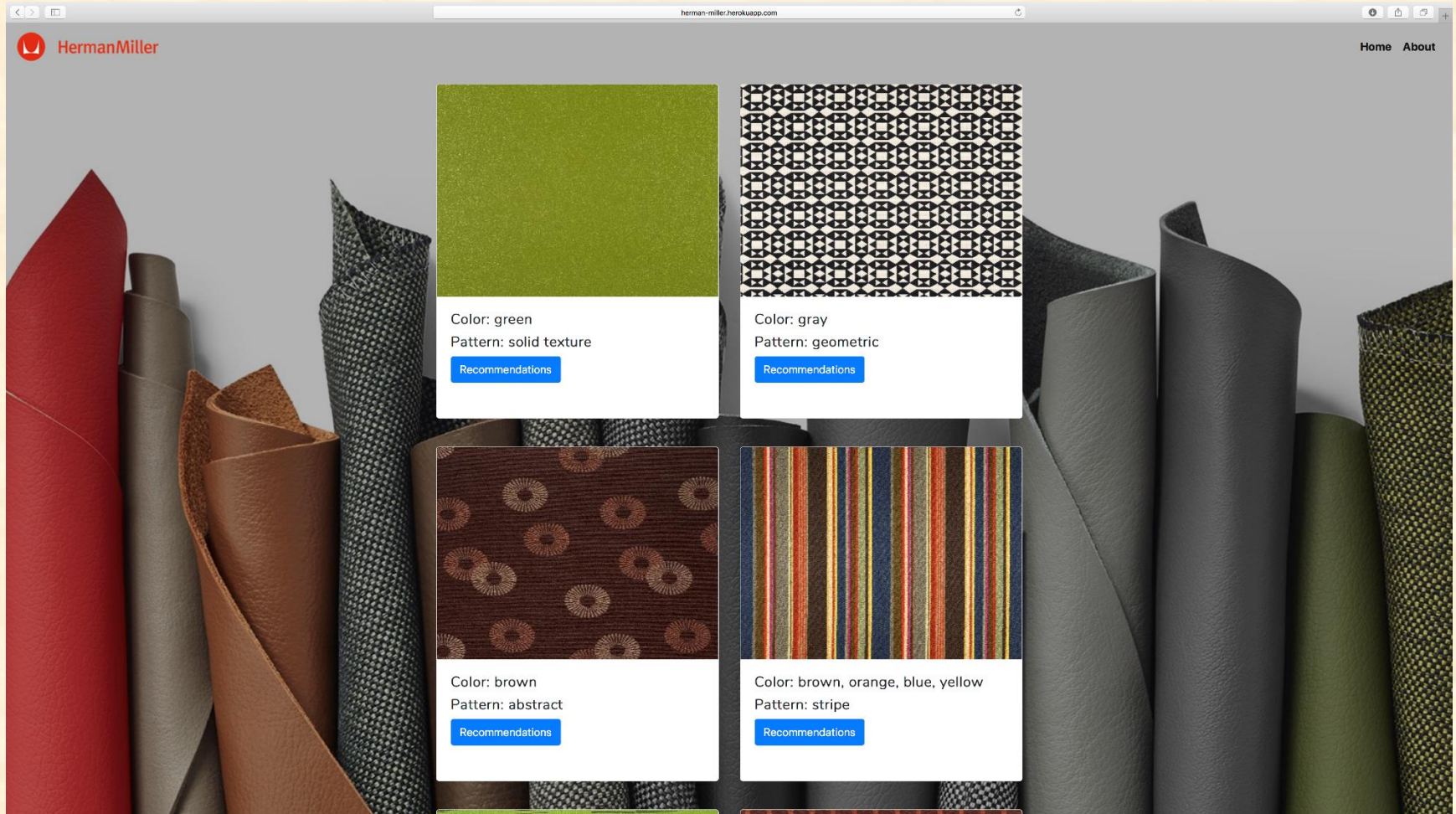
Project Overview

- FIBRE is an artificial intelligence fabric engine, composed of a classification system and recommendation engine
- The classification component uses deep learning and computer vision models to objectively classify fabrics
- The recommendation engine correlates any fabric a customer may submit with Herman Miller fabrics

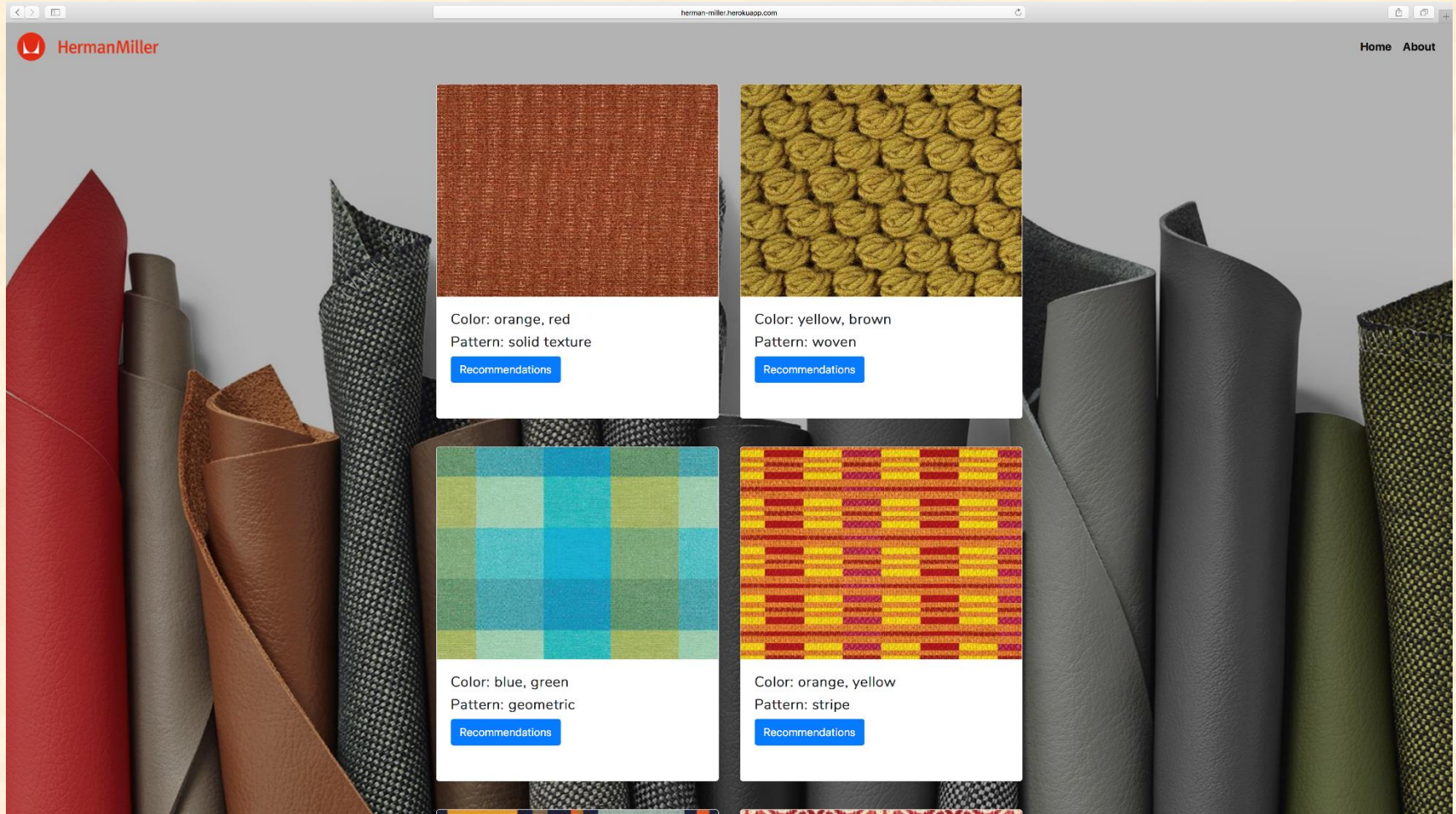
System Architecture



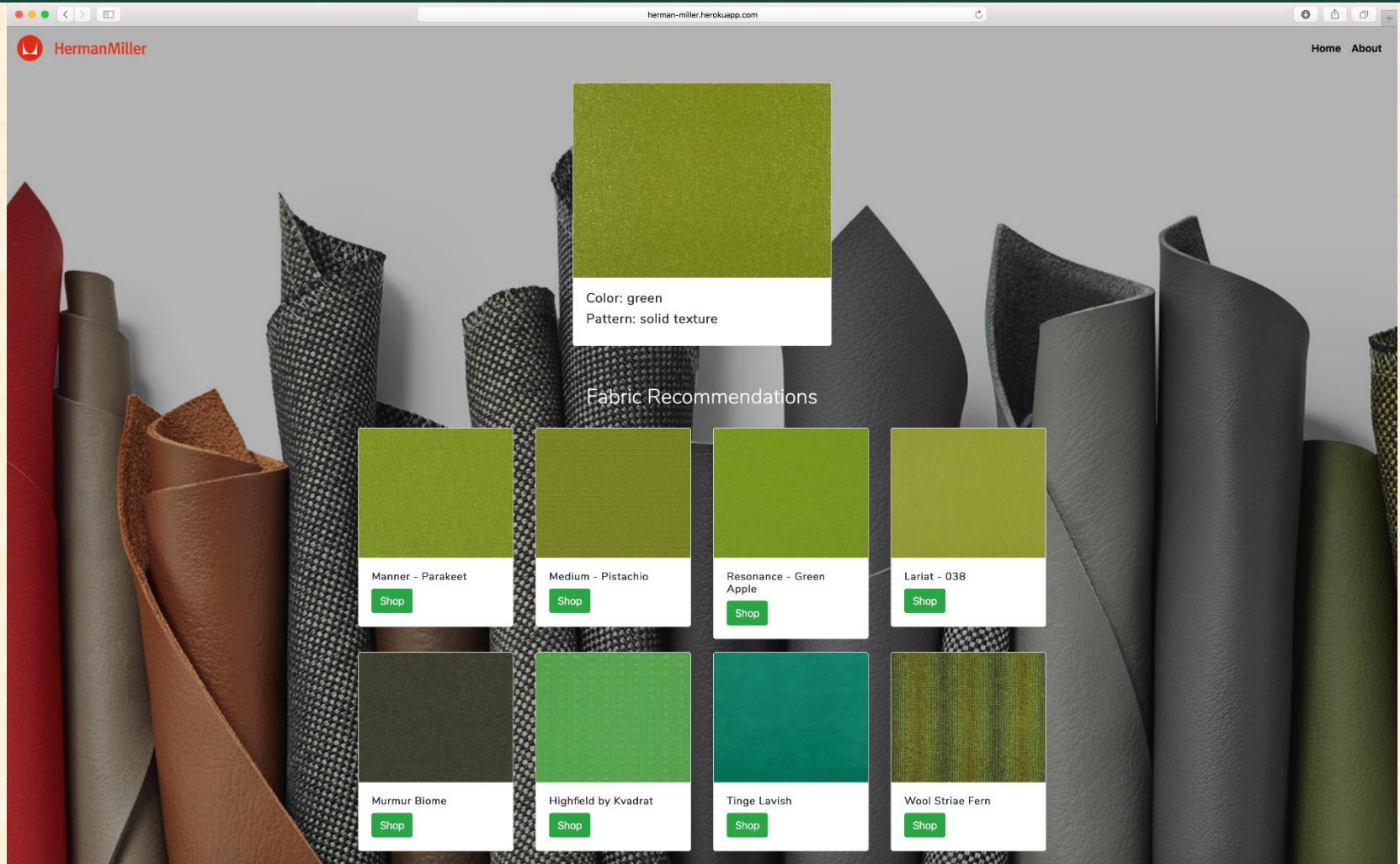
Web-App Single Classification



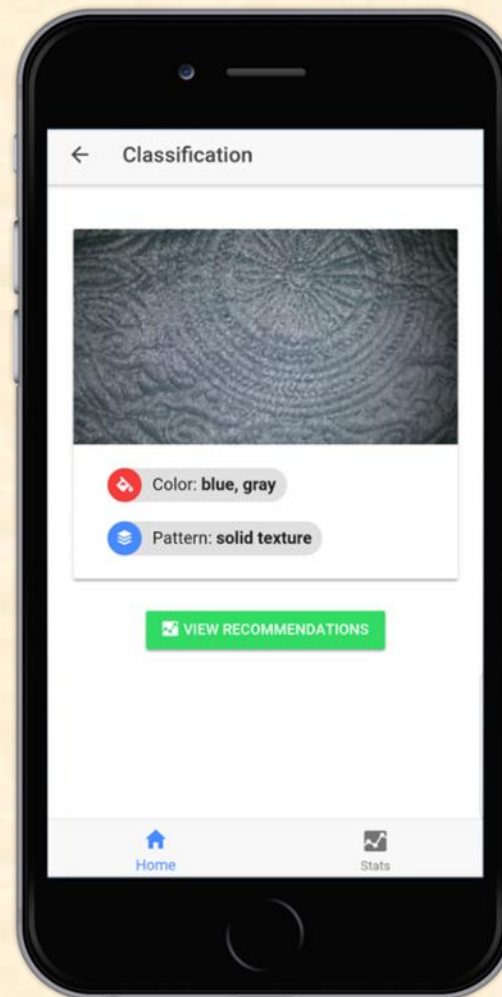
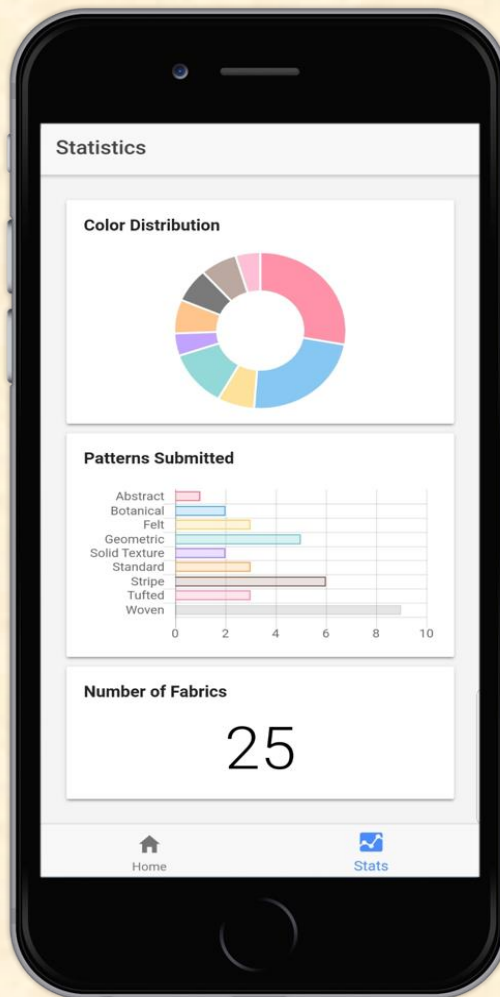
Web-App Multiple Classifications



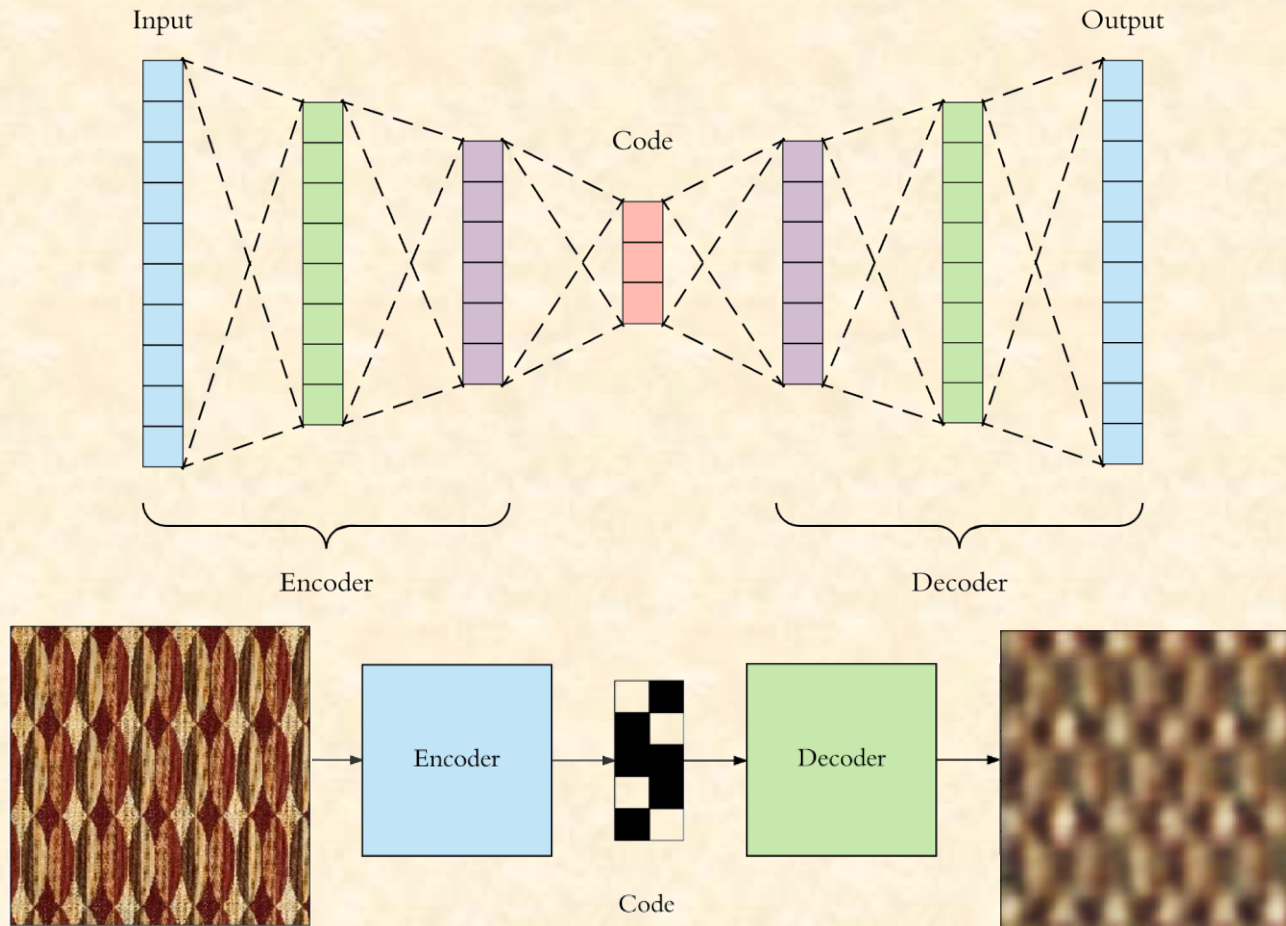
Web-App Recommendation



FIBRE Mobile App



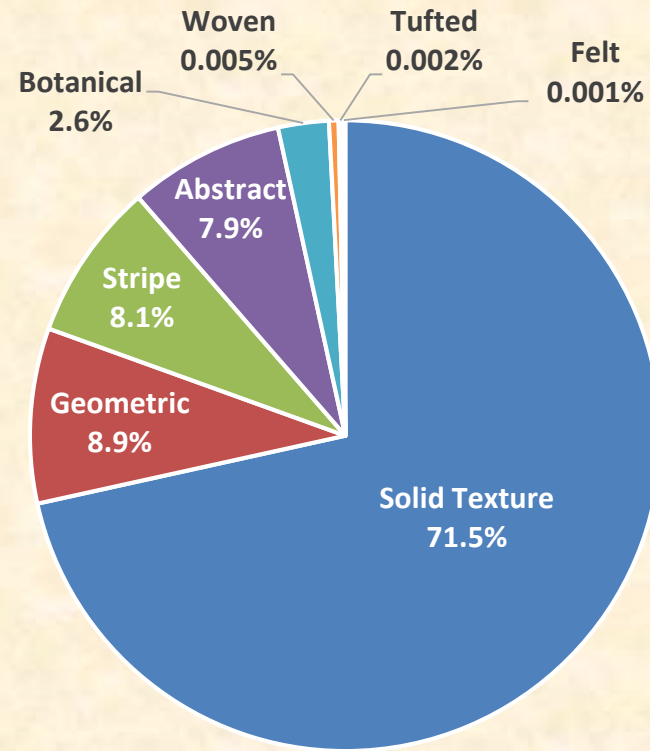
Autoencoder Based Recommendation



Recommendation Engine

Total Fabrics: **5,306**

- Solid Texture: **3796**
- Geometric: **476**
- Stripe: **430**
- Abstract: **422**
- Botanical: **138**
- Woven: **26**
- Tufted: **10**
- Felt: **8**



What's left to do?

- Finish migrating Heroku app to AWS
- Add tokens for FIBRE API
- Improve recommendation engine algorithm
- Finalize iOS deployment (stretch)

Questions?

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