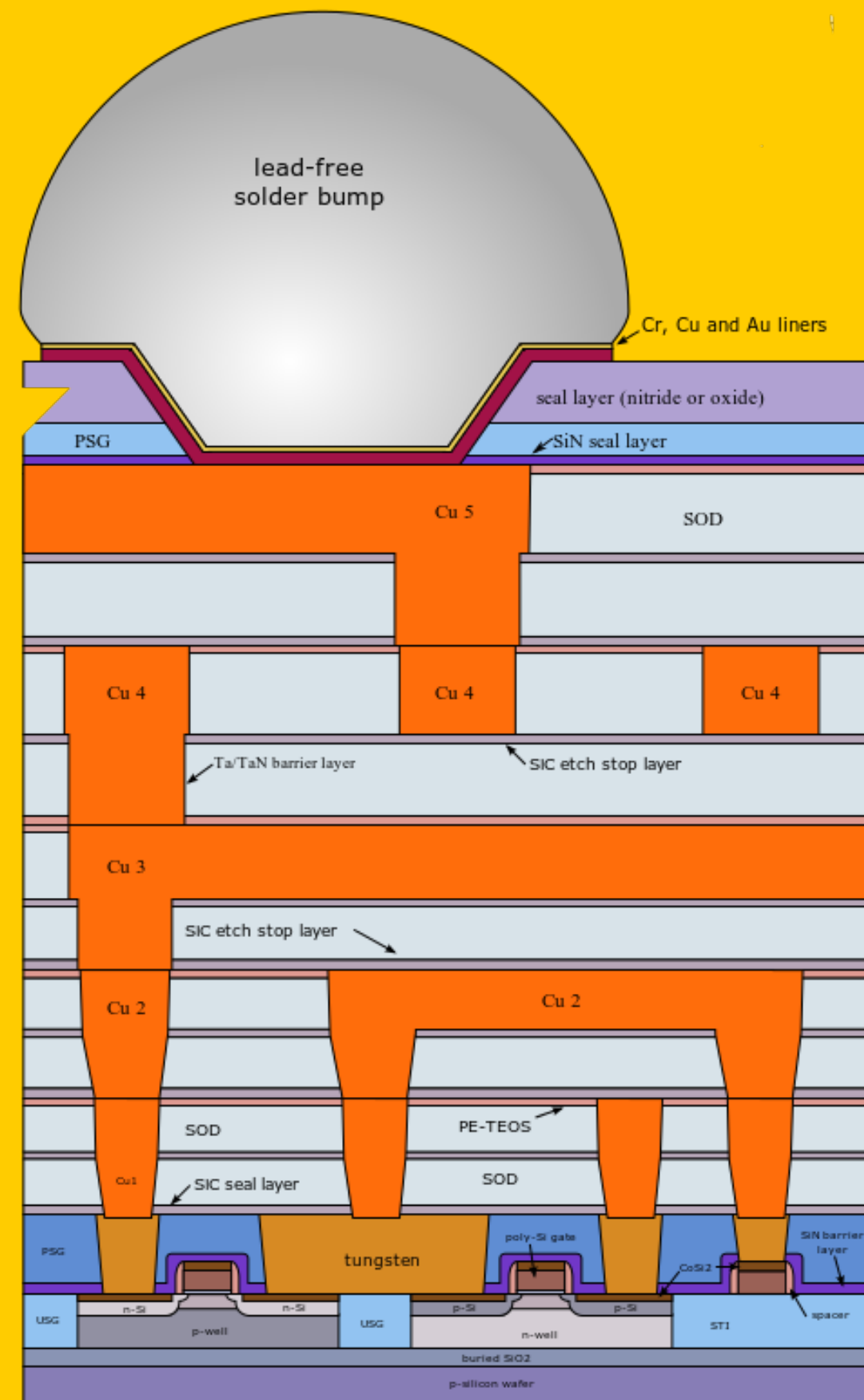




Zero-Iteration Manufacturing

Increasing Complexity in Semiconductors



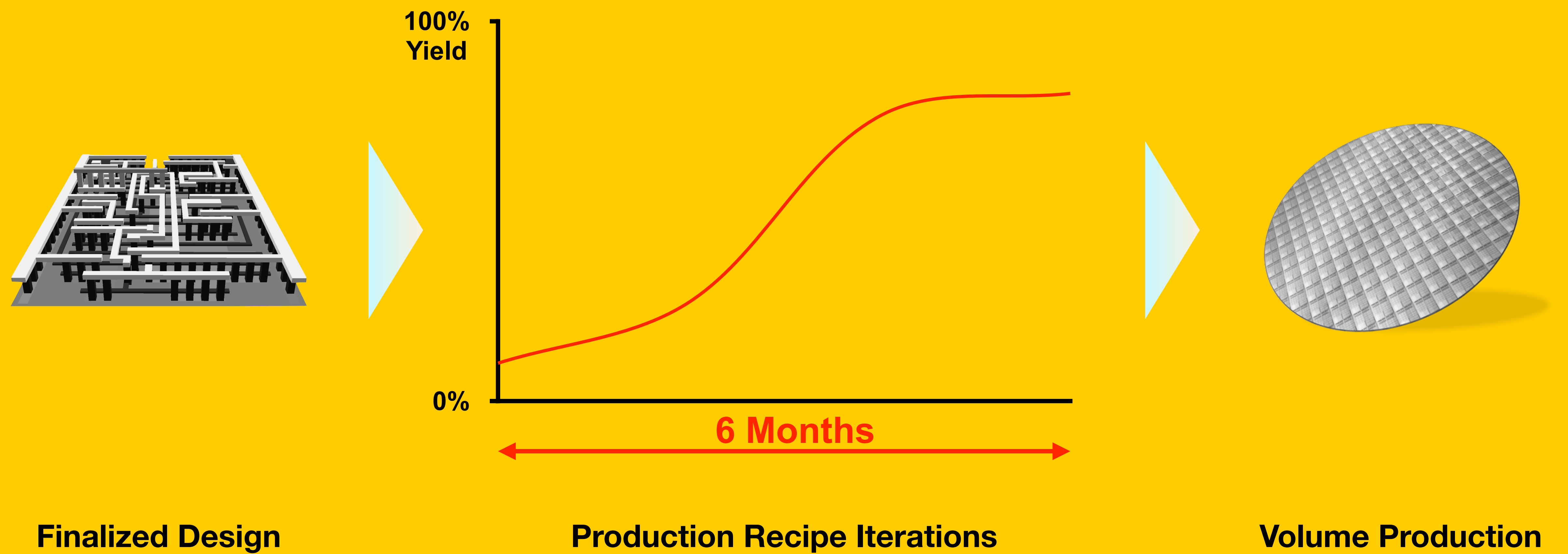
Hundreds of production steps

Thousands of process parameters

Billions of transistors/chip



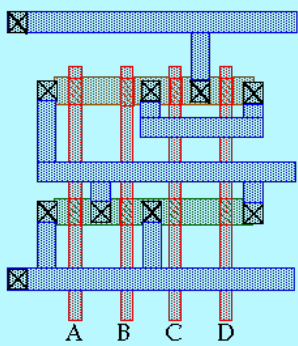
Challenge: Getting to Volume Production ASAP



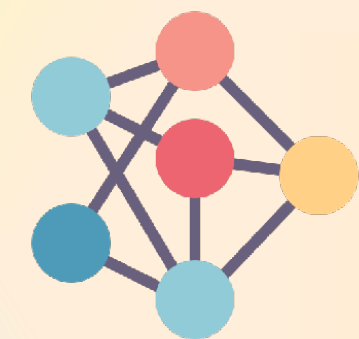
Minimizing Trial & Error With AI



Historical Data

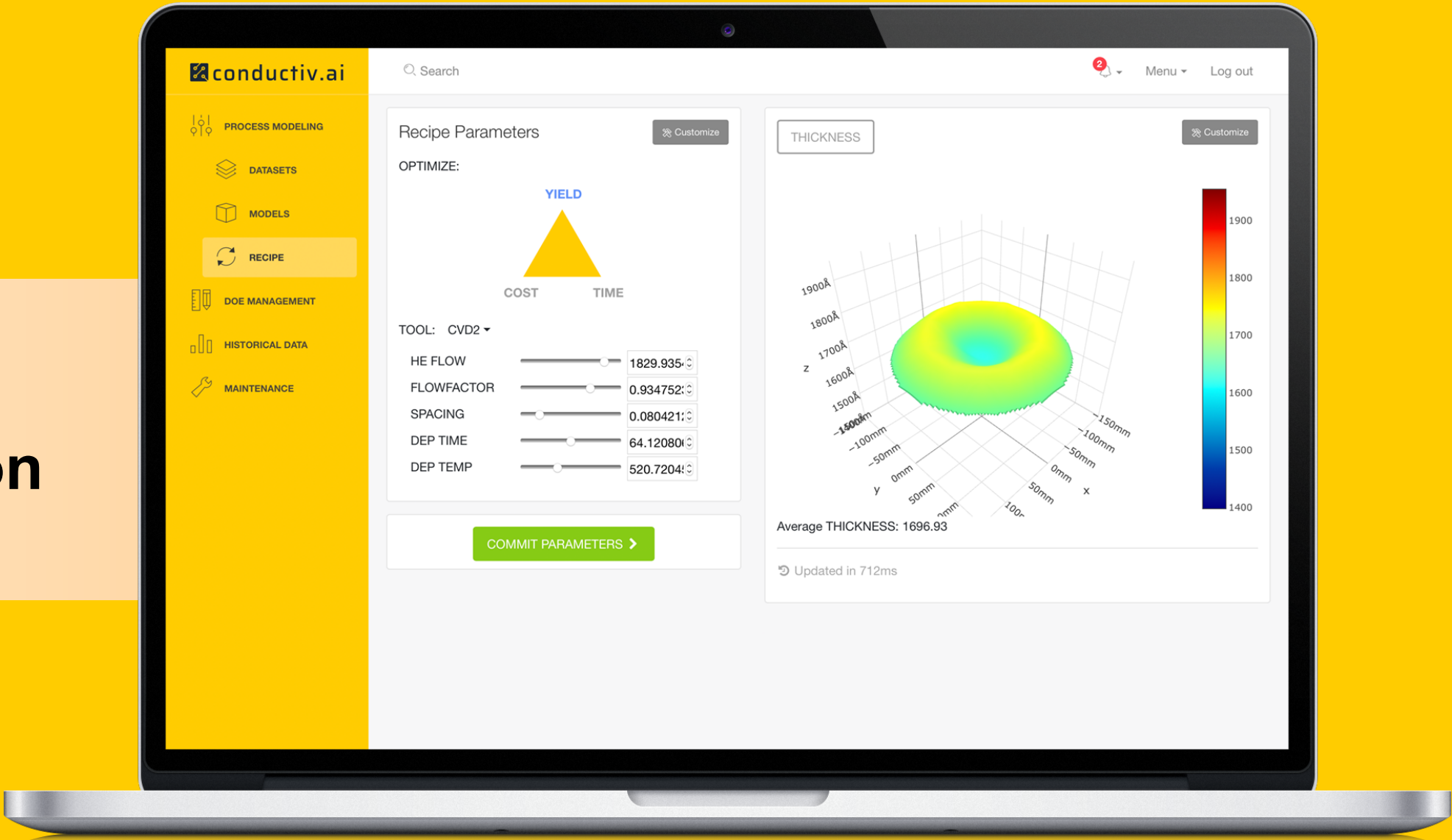


Synthetic Data

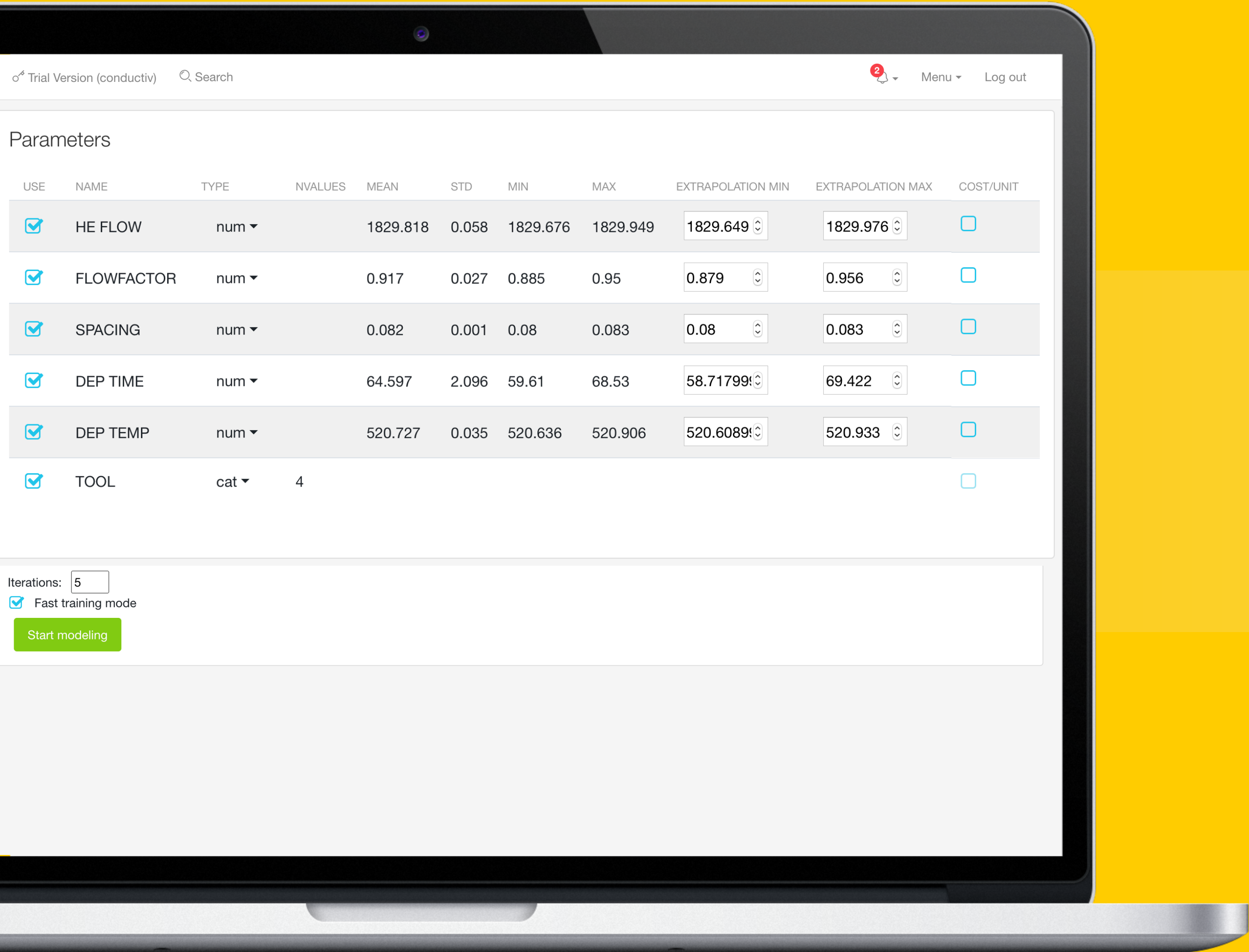


AI Engine

Virtualized
Recipe Iteration



1. Automated Data Pre-Processing

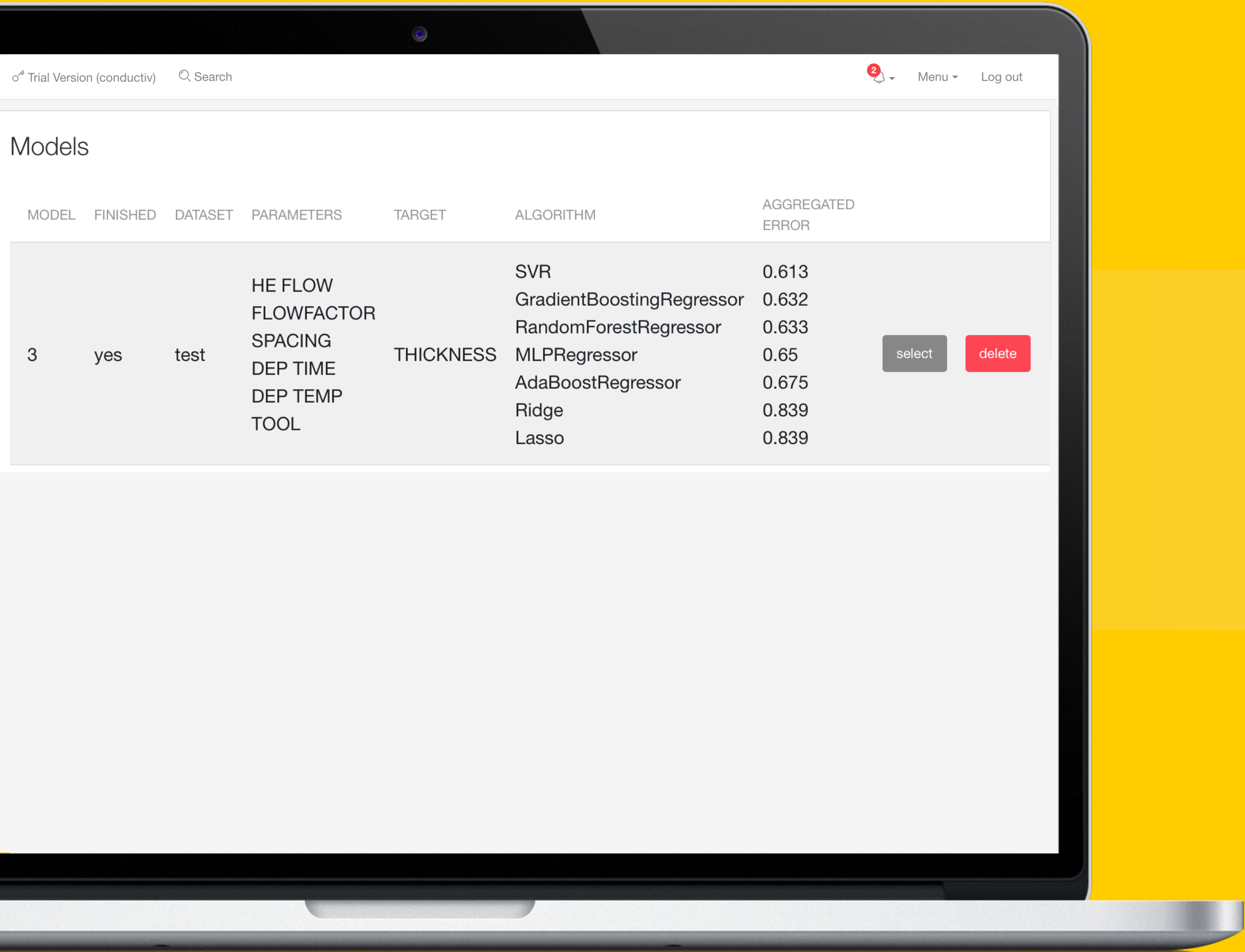


Missing Values & Imputation

Duplicates & Outliers

Normalization

2. Automated Machine Learning

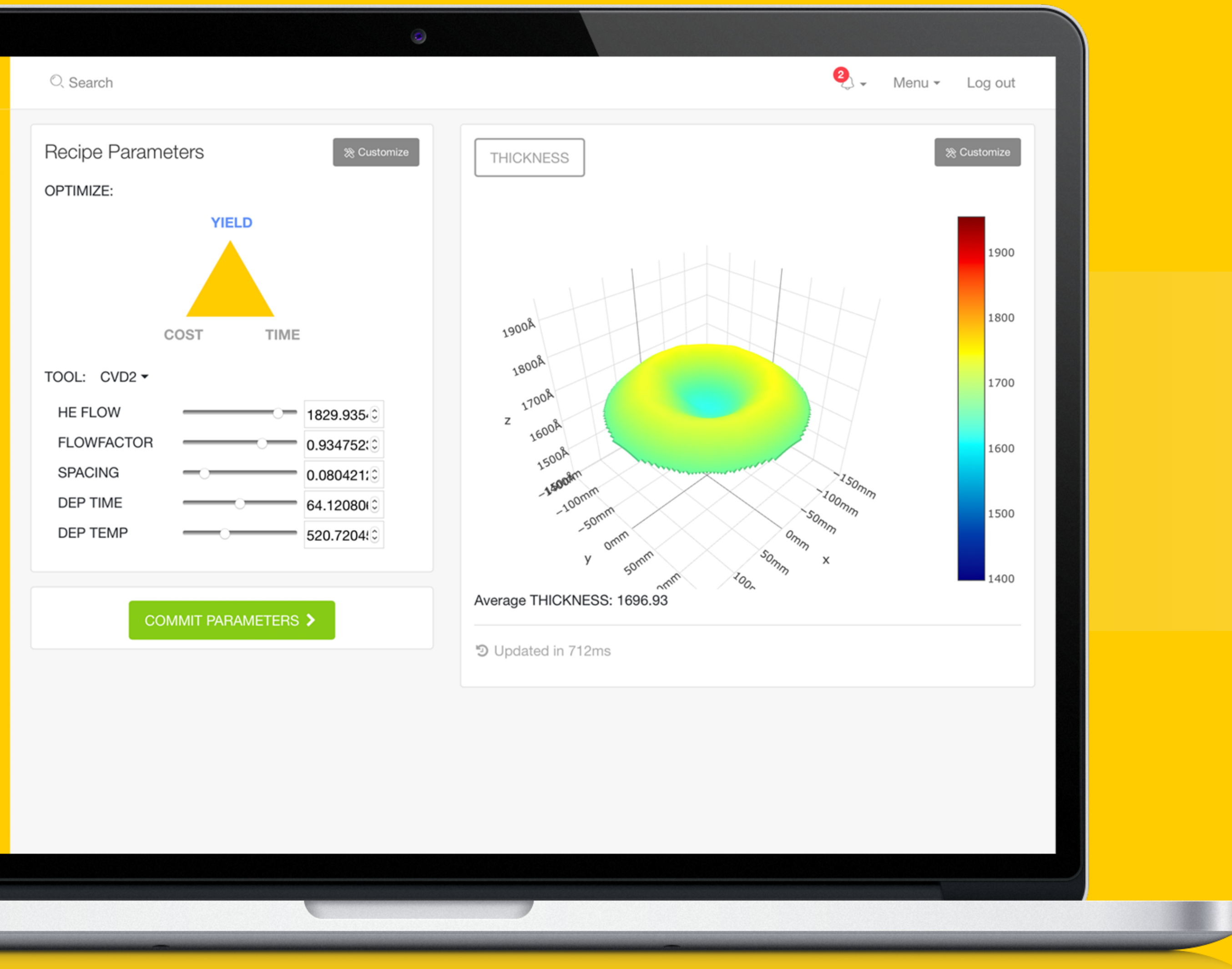


Feature Engineering

Algorithm Selection

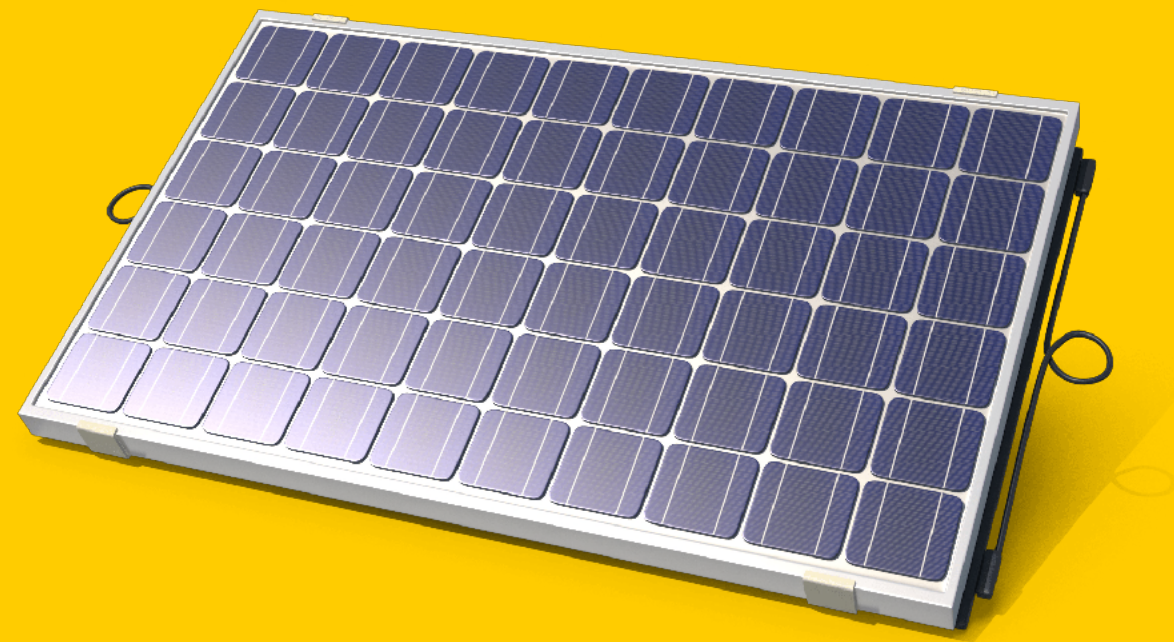
Parameter Optimization

3. Recipe Optimization

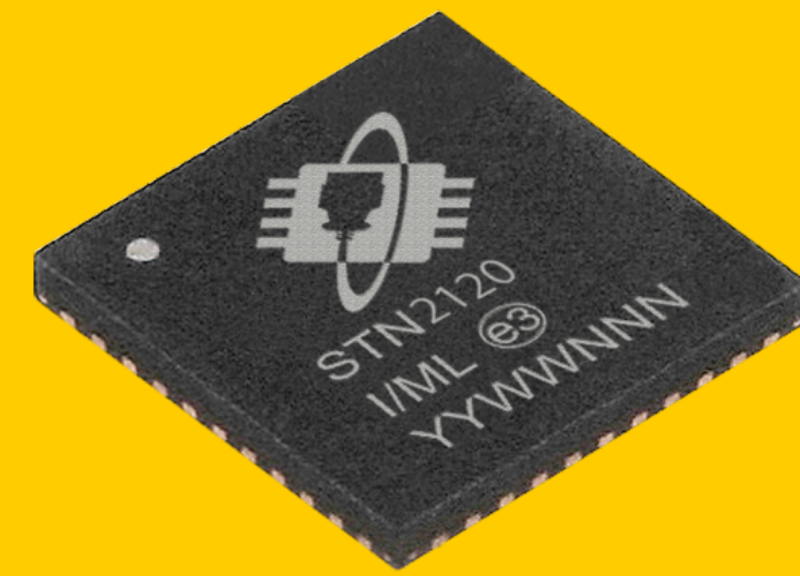


User-Specified Criteria
Localized Recipes
Real-Time Visualization

Manufacturing Process Control



Photovoltaics



Memory/Logic



LCD/LED



Atomic 3D Printing

\$8B TAM

Complementary Team

Calvin Ng



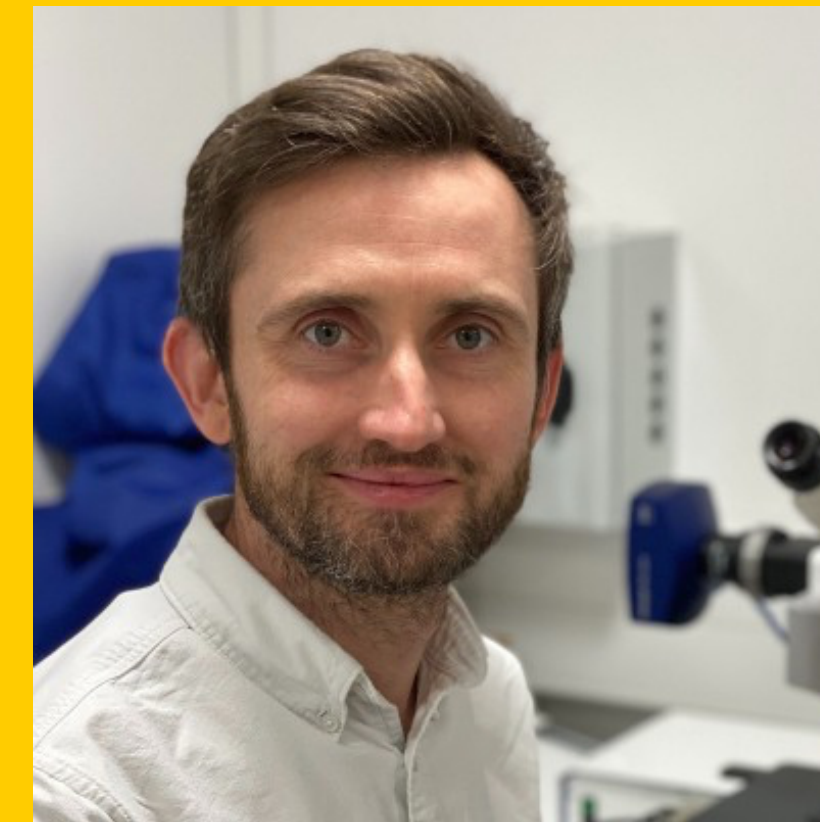
Vadim Pinskiy



Vamsi Spandan



Patrick Parkinson



Mark Ayzenshtadt





Zero-Iteration Manufacturing