



fairplay

FAIRNESS-AS-A-SERVICE

**Fairness Infrastructure
For Lending**

Algorithmic discrimination is everywhere



Wall Street regulator probes Goldman over allegations of sexist credit decisions at Apple Card

November 10, 2019



Amazon scraps secret AI recruiting tool that showed bias against women

October 10, 2018

THE WALL STREET JOURNAL.

New York Regulator Probes UnitedHealth Algorithm for Racial Bias

October 29, 2019

THE WALL STREET JOURNAL.

Banks Brace for Tougher Rules Under Biden on Consumer Protection

4 days ago



Uber Faces Civil Rights Lawsuit Alleging 'Racially Biased' Driver Ratings

October 26, 2020



Housing Department Slaps Facebook With Discrimination Charges

March 28, 2019



Lenders are especially susceptible to algorithmic discrimination



Biased training data reflects and reinforces inequities.



Tools for detecting and remediating bias are primitive.



Fair lending regulations are vague and subject to interpretation.

Lenders face unprecedented scrutiny of their fairness practices

Legal and Regulatory Risk



Economic Inequality



Calls For Social Justice



Fair lending compliance must evolve

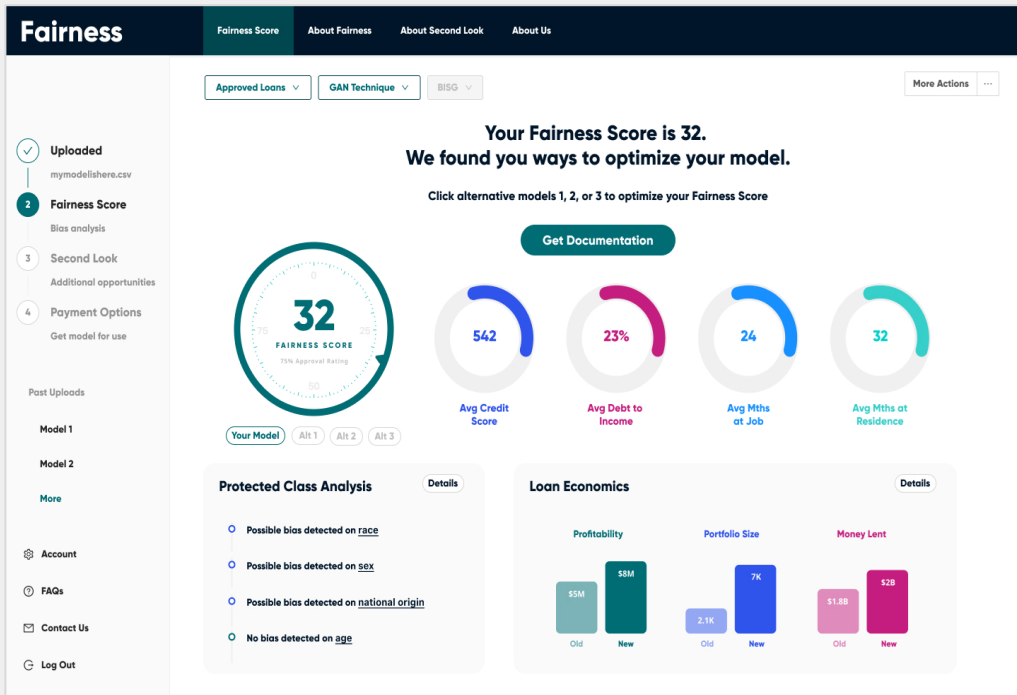


Today, fair lending compliance is:

- **Time-intensive:** an analysis takes months
- **Manual:** armies of consultants and lawyers
- **Costly:** an average engagement is \$15K/mth.

And it still leaves you with regulatory risk because **it doesn't make models fairer — it just attempts to justify biased models.**

FairPlay modernizes and enhances fair lending compliance



FairPlay's fair lending solution:

- **Fast:** an analysis takes seconds
- **Rigorous:** leverages cutting-edge advances in AI fairness
- **Cost-effective:** freemium so users can try-before-they-buy

FairPlay identifies algorithmic bias and remediates it – allowing lenders to extend credit more safely, efficiently and profitably

FairPlay starts with a fair lending analysis that's rigorous, fast and free

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Fairness Optimizer

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We detected possible biases in your model.

[Get Documentation](#)

Summary [See Fairness Optimizer](#)

- Whites Approved 75% and Blacks approved 40% - disparity*
- Whites Approved 75% and Hispanics approved 48% - disparity*
- Males Approved 75% and Females approved 48% - disparity*

*If statistically significant or not depends on the method to assess the disparate impact

Black Applicants ⚠

APR: 4%

Hispanic Applicants ⚠

APR: 5%

Female Applicants ⚠

APR: 8%

All Applicants

APR: 14%

White Applicants ✅

APR: 14% **318.83 x 17**

Male Applicants ✅

APR: 14%

Native Hawaiian/Other Pacific Islander Applicants ✅

APR: 14%

American Indian/Alaskan Native Applicants ✅

APR: 14%

Our AI-powered fairness solution:

- Assesses your loan portfolio for underwriting and pricing disparities in minutes
- Applies the fairness metrics and thresholds regulators use in exams
- Gives you a free fair lending analysis that you would have paid consultants and lawyers \$150K+ to prepare

FairPlay's fairness optimizer remediates bias instead of trying to justify it

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We found ways to optimize your model for fairness.

Get Documentation

More ...

Underwriting GAN Technique 72% Approval Rate

Your model Alternative 1 Alternative 2 Alternative 3

Protected Class Analysis

- Red circle: Bias detected on Blacks
- Yellow circle: Possible bias detected on Hispanics
- Yellow circle: Possible bias detected on Females

Protected Class Analysis

- Yellow circle: Less bias on Blacks
- Yellow circle: Less bias detected on Hispanics
- Yellow circle: Less bias detected on Females

Protected Class Analysis

- Green circle: No bias on Blacks
- Yellow circle: Much less bias detected on Hispanics
- Green circle: No bias detected on Females

Protected Class Analysis

- Green circle: No bias on Blacks
- Green circle: No bias detected on Hispanics
- Green circle: No bias detected on Females

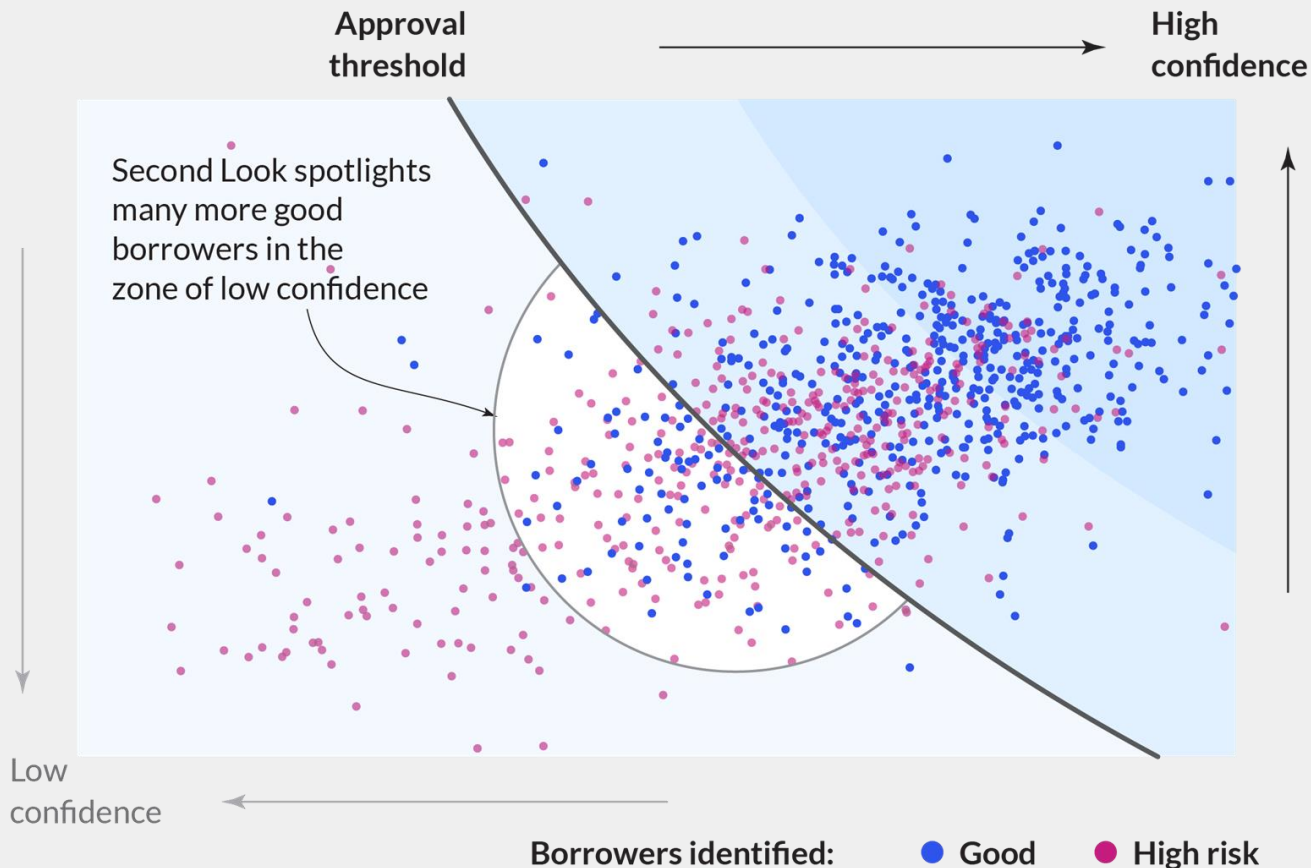
Loan Economics

Model	Profitability	Portfolio Size	Default Rate
Your model	\$8M	\$8.1M	2.1%
Alternative 1	\$8.1M	\$8.2M	2.2%
Alternative 2	\$8.5M	\$8.9M	2.5%
Alternative 3	\$8.6M	\$9M	2%

Our AI-powered LDA search solution:

- Applies latest AI techniques to identify fairer models if they exist
- Fine-tunes your model for fairness using your existing data and variables
- Provides hard evidence to regulators of your commitment to fairness

Second Look identifies good borrowers you previously rejected

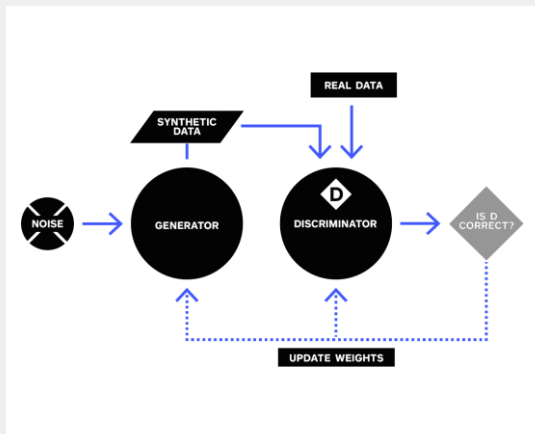


Our AI-powered Second Look:

- Identifies creditworthy borrowers just below your approval threshold
- Improves your profitability and enhances your overall fairness
- Augments -- rather than replaces -- your primary underwriting model

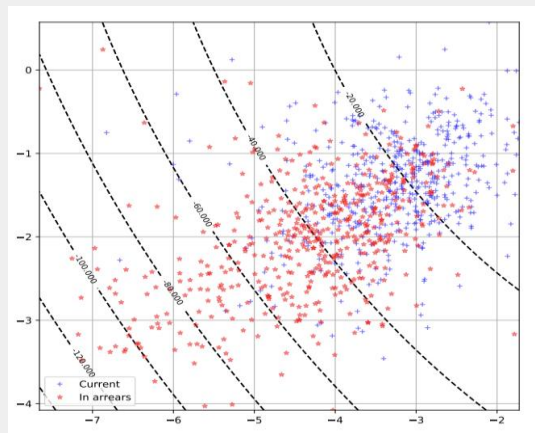
FairPlay is powered by the world's most advanced AI

Adversarial Networks



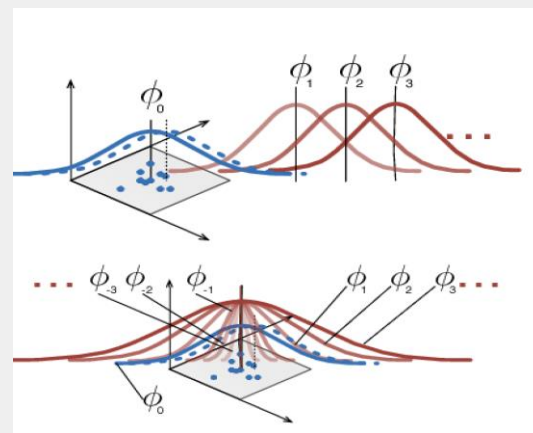
Adversarial networks pit a model maximizing accuracy against a model maximizing fairness in order to arrive at a model that optimizes both.

Generalized Location Models



Generalized Location models measure distances between high dimensional distributions to generate reliability scores and less discriminatory alternatives.

Optimal Transport Theory



Leverage the best new fairness techniques from Stanford, Carnegie Mellon, DeepMind, Google and Microsoft

FairPlay is the lending industry's most comprehensive fairness solution



Bias Detection

Identify whether your model is biased and, if so, why.



Bias Remediation

Automatically generates fairer models that meet your profitability objectives.



Second Look

Identify creditworthy applicants who fall just below your standard approval thresholds so you can approve new, profitable customers and increase fairness.



Model Confidence

Identify blind spots where you might not want to trust your model's predictions.



Auto Documentation

Document the ways you embed fairness considerations into every decision you make



Actionable Adverse Action Reasons

Give rejected applicants a road map for how they can qualify in the future.



Monitoring

Provides real-time fairness analytics to ensure model fairness doesn't deteriorate in production

FairPlay transforms compliance into an engine for growth and goodwill



Drive profitability *and* fairness

Optimize your marketing, underwriting and collections for profitability and fairness – yielding more good loans and saving time and money spent on compliance.



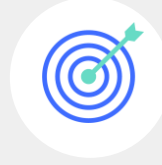
Reduce regulatory risk

Provide regulators with hard evidence that your lending practices are fair by using the world's most advanced math and automated documentation to embed fairness into every credit decision.



Make fairness analyses easy and accessible

Fine-tune the fairness of your model using an intuitive, purpose-built dashboard for business users and compliance professionals -- not data scientists.



Target new creditworthy borrowers

Take a “second look” at borrowers below your approval threshold, identifying the ones that resemble good borrowers you previously approved so you can acquire new customers without taking on much risk.



Strengthen your brand

Join FairPlay's Algorithmic Fairness Certification program, demonstrating your commitment to help women, people of color and other underserved groups access the capital they need and deserve.



Focus on what you do best:

FairPlay's affordable, automated solution frees up expensive internal resources (like data scientists) so they can focus on building new and better products.

FairPlay is easy to implement, secure and fits within existing lender workflows



Flexible

Choose whether to optimize your existing model or augment it—and whether it should be hosted in your environment or ours.



Secure

Get government-grade security and ensure all data is hosted on U.S. servers with our best-in-class cloud infrastructure partners.



Seamless

Deliver scores easily into your existing workflows with our Fairness API that can be implemented in hours.

FairPlay is better, faster and more cost-effective than the competition

	Traditional Fairness Review	FairPlay: Fairness-as-a-Service
WHAT	Manual analysis powered by consultants	Automated analysis powered by AI
RESPONSE TIME	Several months	Results within hours
COST	Typically starting at \$15,0000/month;	Free to try; Full suite of fairness services:
FAIRNESS REVIEW	<ul style="list-style-type: none">■ Fair Lending Analysis■ Fair Lending Report	<ul style="list-style-type: none">■ Fair Lending Analysis – FREE■ Fair Lending Report
FAIRNESS REMEDIATION	None	<ul style="list-style-type: none">■ LDA Search – FREE■ LDA Search Report■ Model Optimized for Fairness (LDA Model)■ Second Look Analysis – FREE■ Second Look Report■ Model Risk Management Analysis – FREE■ Model Risk Management Report <p>FairPlay offers these add-on services:</p> <ul style="list-style-type: none">■ Model Hosting for LDA Model■ Model Monitoring for Fairness Degredation■ Actionable Adverse Action Codes

CONTACT:

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