



**Personal Loan Underwriting Model Update
Version 25.0.0**

Description:

Personal loan underwriting model update v25.0.0 introduces several changes. First, it introduces new features designed to capture underperformance among borrowers with back-to-back Upstart loan applications and those with poorly performing prior Upstart loans. Second, it incorporates the Equifax retro data into the training data. The Equifax retro data provides loan performance information for prior Upstart applicants who instead obtained loans elsewhere. In addition, this update adds a new payment transition neural network base model to the overall model ensemble. Finally, this update features a data refresh through early December.

Criteria for Productionisation:

- This update has met the standard model update criteria (e.g., improves model accuracy and was evaluated using standard techniques).
- This update improves *NPV Loss RMSE* by 1.71 (0.037%), *loan-month log-loss* by 9,183 (0.065%), and *log-loss-given-current-status* by 7,011 (0.178%).
- This update has passed all required manual and automated code review. Pricing diagnostics have been run and peer reviewed.
- This update was subjected to fair lending tests and passed.

Model Metrics:

These metrics are computed on a common training data set consisting of repayment data through early December 2025, where *Baseline* refers to model version 24.0.3, retrained with the same data as 24.0.0, and *New* refers to model version 25.0.0.

	Baseline	New	Relative Difference
Loan Month Log Loss	14,215,616.99	14,206,433.82	-0.065%
Log Loss Given Current Status	3,949,832.05	3,942,820.71	-0.178%
NPV Loss RMSE	4,678.19	4,676.47	-0.037%

Estimated Approval Impact:

We use a recent set of over 90,000 applicants between early November 2025 and early December 2025 to estimate the approval impact.

	24.0.3		
		Declined	Approved
25.0.0	Declined	54.93%	2.33%
	Approved	1.80%	40.94%

Fair Lending Summary:

Upstart's Fair Lending team has completed its review of the fair lending testing for the Personal Loan Underwriting Model update v25.0.0 and has approved the model for production. Version 25.0.0 introduces new features derived from TransUnion credit report data intended to better capture underperformance among borrowers who submit back-to-back applications or who have a history of poor performance on prior Upstart loans. Quantitative proxy analysis was performed; no high risk features were added in the model. The new features along with other changes outlined in the "Description" section are expected to improve the model's overall accuracy.

Adverse Impact Ratios (AIRs) were calculated for all demographic groups. Two groups—Black and Hispanic—showed AIRs below the passing threshold of 0.9 and did not pass the AIR Comparison Test. However, subsequent MABG testing indicated that both groups passed, showing no evidence of over-prediction error. A Less Discriminatory Alternative (LDA) Search identified a viable alternative model that improved AIRs for these groups while satisfying all alternative-model constraints.

Based on these results, the model update met all required fair lending testing protocols and received approval.

Change Validation Summary:

Consistent with Upstart's Model Validation Policy, the ML Model Risk team conducts a pre-launch change validation for all MAJOR changes to models with an underwriting business function. This assessment includes an evaluation of the model's conceptual soundness, specifically focusing on changes being implemented in the proposed MAJOR version release, as well as a determination whether such changes warrant any changes to ongoing monitoring. In addition, the team may conduct ad hoc analyses as required to ensure that the model is fit for its intended use.

For version 25.0.0 of the Personal Loan Underwriting Model, this assessment was completed on December 16, 2025 and concluded that the model is conceptually sound, that existing monitoring approaches will not be materially affected, and that out-of-sample testing rigorously demonstrates the accuracy gain that is anticipated with this release.