

JAYWING — RISK

# AI — FRAUD MODELLING

JOIN THE WHITEBOX REVOLUTION

AI has revolutionised fraud prediction, allowing financial institutions to keep up with ever-evolving fraudster techniques.



In theory, intelligent technologies should give lenders the ability to say yes to more customers with greater confidence in the commercial viability of their decisions.

And whilst the modelling capabilities of AI and machine learning are widely endorsed by banks and payment providers, they still face a lack of trust from consumers and regulators alike. The black box problem only intensifies this.

The black box problem, which makes these complex technologies hard – sometimes impossible – to explain, manifests itself when the relationship between model inputs and outputs becomes opaque as the power and success of the model improves.



**THIS MEANS THAT LENDERS DON'T KNOW WHY THE AI DOES WHAT IT DOES.**

This creates two big issues for lenders:

- ① The use of AI demands a systematic, consistent approach to data governance to assure the quality of input data.
- ② The decision-making process must be explainable to all stakeholders, including consumers, regulators, analysts, and senior management.

Unlocking the black box offers huge potential for lenders to increase the accuracy of their risk models, helping increase acceptance rates and reduce their levels of bad debt.

# SOLVING — THE EXPLAINABILITY PUZZLE

In a data environment where many niche rule-based inputs are available for modelling, and anomalous data patterns abound, the use of advanced AI and ML techniques create dramatically stronger results than traditional statistical approaches.

The traditional models that lenders use for assessing risk are founded on a very clear link between input and output, so lenders can always say what's caused a particular score. But in complex ML models, every input interacts with every other input, often multiple times, and they can generate counter-intuitive or anomalous outcomes that can seem impossible to explain.



# A WHITEBOX SOLUTION: EXPLAINABLE AI WITH NO PERFORMANCE PENALTY

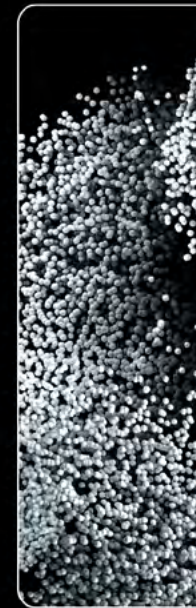


NICK SIMÉ — HEAD OF MODELLING

Archetype is Jaywing's multi-award-winning AI software for advanced predictive modelling. Interpretable. Controllable. Built with explainable AI.

Archetype uses deep neural networks to squeeze vastly more insight out of your data than traditional techniques to create more accurate credit risk and fraud models. It does this using patent-pending mathematical techniques which enable the user to control the model and explain the outcome, both at a global and local level.

Global explainability ensures that model inputs can be constrained to have a logical impact on model predictions. Local explainability provides transparency on an individual case level, allowing underwriters to understand why an application or payment has been referred for review.



## WITH ARCHETYPE'S LOCAL EXPLAINABILITY, LENDERS CAN UNDERSTAND:

- ① The top impact factors on an individual or local level for all applications or payments.
- ② The direction of the impact (positive or adverse).
- ③ The magnitude of the impact.

This ground-breaking use of explainable AI ensures that models adhere to the same intuitive rules that you would expect of a traditional scorecard but deliver far more powerful results. For leading lenders, Archetype's predictive models have identified nearly 80% of fraud activity, within just a 2% segment of high-risk applicants.

Armed with this, you can prioritise which cases to work, and understand what has prompted the referral.

# GETTING STARTED WITH ARCHETYPE



By harnessing the power of data you already hold – from payment data, data from the application process, from bureau calls, and from third party warning and trigger systems – we build models that predict the likelihood of a new transaction or application being fraudulent.

Our models can also distinguish between first and third-party fraud and incorporate your own fraud outcome data, enabling you to model suspected frauds; not just those which were registered with centralised sources such as CIFAS.

Crucially, these fraud models don't require you to integrate any new sources of data and can be deployed within any modern decision system. On top of that, they don't require statistics experience either – you need to understand your data, not the machine learning process.



BEN O'BRIEN – MANAGING DIRECTOR

## USING YOUR OWN FILE OF DEVELOPMENT DATA, GETTING STARTED WITH ARCHETYPE IS EASY:

### 1 SECURE ACCESS

Access to Archetype is granted through our securely hosted service, which is browser-based to get you and your team up and running quickly.

### 2 SET UP YOUR FIRST PROJECT

Upload the data to give the system basic information about the outcome you're modelling. The system will give you a set of recommendations about which fields to include.

### 3 REFINE THE DATA

By importing definitions and creating groups, you remain in control of how the data should behave within the model, using guidance from Archetype to refine the choice of fields you want to use.

### 4 BUILD YOUR MODEL

Click a button to create your first model. Select options to choose how to configure the neural network. Depending on size and complexity, creating your first model typically takes under half an hour.

### 5 REVIEW THE RESULTS

The outputs and insight from the models include five different types of modelling charts.

Archetype enables models to be 'always-optimal' or redeveloped the moment they deteriorate without incurring the costs typically associated with model development. What's more, model governance is built into the process up front, ensuring the models you create are always in line with the expectations of your business.

## Jaywing & Virgin Money win coveted anti-fraud solution award with Archetype.

With over 30 successful projects and several award wins for its credit scoring work, Archetype has been transforming Jaywing's client's risk modelling for over 3 years. Most recently, Archetype was awarded the best Anti-Fraud Solution at the Credit & Collections Technology Awards with Virgin Money.

The award highlights the latest success of Jaywing's proprietary technology in enabling Virgin Money to enhance its fight against financial crime, improving detection processes and driving down fraud losses, at a time when credit and collections companies face business pressure in the form of continued regulatory scrutiny and an ongoing fight against application fraud.

Archetype delivered a model with predictive power of 93%, offering a relative uplift of 31% over the incumbent approach. The results achieved for Virgin Money will enable them to

identify 90% of confirmed fraud cases by assessing just the top-scoring 10% of applications.

Virgin Money was able to focus its fraud detection efforts more accurately, letting low risk cases fly through the process without having to be reviewed. This is enabling:

- Savings on fraud losses
- More frauds identified
- Reductions in third party data costs
- Reductions in costs of fraud underwriting.



# JOIN THE WHITEBOX REVOLUTION

Jaywing is a creative and media agency, powered by science and enabled by technology.

Our heritage is in risk consulting, having been founded in 1999 to deliver data analysis skills to the financial services industry; our experienced team of risk and data science specialists is now more than 50 strong, and has a depth of expertise unrivalled by any other provider.

We have supported most of the UK's leading lenders to increase profitability, mitigate fraud risks, and improve the way they use data to make decisions. Our collaborative approach brings hand-picked teams of specialists to each client challenge across a host of sectors to connect powerful ideas, rich data and new technologies.

Discover more at [risk.jaywing.com](https://risk.jaywing.com) or email [risk@jaywing.com](mailto:risk@jaywing.com) to speak directly to our experts.

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