



AI Explainability is Crucial

Financial institutions around the world are making **large-scale investments in AI**, while governments and regulators struggle with the significant uncertainties and growing public trepidation as AI becomes central to the fabric of institutions, markets and individuals.

There is little dispute about the **significant accuracy/precision increases of advanced machine learning and deep neural networks**. However, the adoption of them in production environments for increased revenues, customer satisfaction, and the attainment of business objectives **requires an articulation of their intricacies** to model validators, internal audit, end-users, customers, compliance and regulators that the data scientists, quants and/or model developers have a challenge to provide.

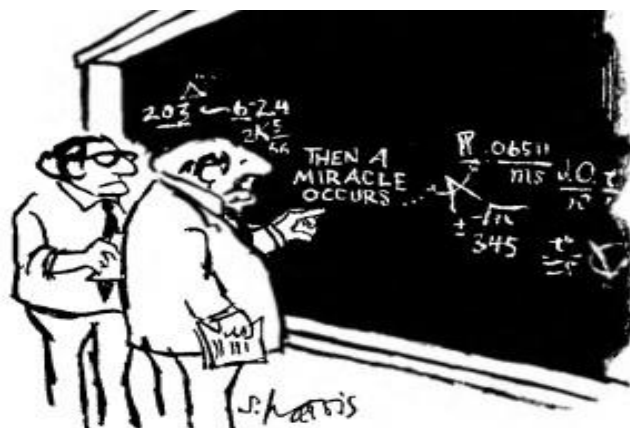
Does this mean one should only use AI models for decisions which are clear but less accurate, or can we use significantly more accurate 'black boxes'?

It is clear that at the centre of this is **the importance of AI explainability**. Retrenching is not an option if one wishes to still be relevant in the near, medium and long-term future.

Do not retrench but adopt explainability

Machine Learning explainability refers to the ability to make the behaviour and predictions of Machine Learning systems understandable and helps explain crucial aspects of our models:

- What drives the model predictions?
- Why did the model take a certain decision?
- Can we trust the model prediction?



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

AI facial analysis demonstrates both racial and gender bias

<https://www.engadget.com/2018/02/12/facial-analysis-ai-has-racial-gender-bias>

12/02/2018 · Researchers from MIT and Stanford University found that that three different facial analysis programs demonstrate both gender and skin color biases. The full article will be presented at the ...

UK government investigates AI bias in decision-making

<https://www.artificialintelligence-news.com/2019/03/20/uk-government-ai-bias-decision>

20/03/2019 · The UK government is launching an investigation to determine the levels of bias in algorithms that could affect people's lives. A browse through our 'ethics' category here on AI News will highlight the serious problem of bias in today's algorithms.

"Ability to adopt more accurate, 'Black Box' AI models without resulting in validation and compliance problems."

BlackRock shelves unexplainable AI liquidity models - Risk.net

<https://www.risk.net/asset-management/6119616/blackrock-shelves-unexplainable-ai>

Hosted by Risk.net, these awards honour excellence in op risk management, regulation and risk management service provision. 19 Jun 2019 New York, USA. Risk Technology Awards 2019. Hosted by Risk.net, these awards bring together recognition of the leading vendor solutions for credit, operational and enterprise-wide risk management...

Be Regulatory Compliant

Regulators want to know how these AI models work and understand 'what happened'. This partly accounts for the expansion of regulations in scope and severity over the past several years. In finance alone, the Federal Reserve Board's SR 11-7, the Targeted Review of Internal Models, sanction screening, Anti-Money Laundering (AML) regulations, Know Your Customer (KYC), various anti-fraud mandates, the Bank Secrecy Act and more either compel organizations towards complex AI models whilst demanding explainability in order to do so.

There are similar regulations in verticals like healthcare and insurance pertaining to explainable model results. There are numerous other regulations like General Data Protection Regulation (GDPR), which covers customer privacy.

Trust your AI Models

- 1 **Identity Model Biases** - from underlying data, feature selection and/or training process that may introduce bias into models
- 2. **Pass your Model Validation** - Understanding how the model behaves and works is a pre-requisite for independent model validation.

- 3. **Compliant with the Regulatory Framework** - Regulators require firms to be able to explain how their models work (e.g. GDPR, SR 11-7)
- 4. **Instil Model Confidence** – Articulate and precise explanations of model predictions creates confidence in model users.

AI Explainability at your finger tips



Turn-Key Deployment

ARTIFICIAL INTELLIGENCE IS BEING USED TO MAKE DECISIONS ABOUT YOUR LIFE WHETHER YOU LIKE IT OR NOT



- ✓ Modular Architecture
- ✓ Programmatic Interface
- ✓ Built-in Scalability
- ✓ Simple Integration
- ✓ Container Friendly
- ✓ Flexible Deployment
- ✓ Cloud or On-Prem

Please contact Delta Capita at capitalmarketsdelivery@deltacapita.com if you are interested in any of the following areas:

- DC MINT - Model Interpretability
- DC COMPRESSION - Model Compression and Model Optimisation
- DC DOCS - Automated Model Documentation
- DC VOICE - Voice/NLP on large data sets and Wealth applications
- DC RISK - Contagion Risk Models