

**Specialty Finance Group, LLC (Delaware LLC)
("SFG")**

AI Wisdom Apps™

Making Artificial Intelligence Intuitive, Powerful, and Easier For Experts to Use

**Introducing ~ MAAI™
Mathematically Assisted Augmented Intelligence™**

By Richard Benson
President, Specialty Finance Group, LLC

Our Observation Is: The Brightest Guy in The Room Is The Quiet One Listening
and Learning Something He Did Not know... We prefer to Listen So...

If you Would Like to Chat, Just let us know...

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Concepts discussed below:

- 1) What is Artificial Intelligence, “AI” really? Think MA/AI Augmented Intelligence.
- 2) Why AI is very limited, with its power a function of the knowledge and skill of its creator.
- 3) How can a World Chess Champion, Magnus Carlsen, beat the computer?
- 4) What is a Self-Learning model? Can They work? And why most fail at the worst possible moment.
- 5) How Could the Management at Zillow make \$500,000,000 vaporize with a really Stupid AI Model?
- 6) The Rise of AI. Why most AI models still fail. (Its not the math and the machine, it is the inexperienced programmers writing the models!)
- 7) SFG’s AI Wisdom APPs. A Few Wisdom Apps as Examples ~ a.)..... o.)
- 8) So, How Do Wisdom APPs Work?
- 9) How do you use the Suite of Wisdom APPs on a Real-World Economic Forecasting Problem? Example: San Francisco Housing

1) What is Artificial Intelligence/ “ AI” really?

In a very real sense how can you say an adding machine run by an algorithm that makes a pure calculation is “Intelligent.” Binary Systems are on or off, right or wrong. They are not self-aware and able to initiate independent action that were not programmed into the code. Pray that the programmer is intelligent and has common sense.

Consider “Artificial” as an odd choice of a word... Incredibly Enhanced would be more like it... enhanced in the ability to process billions of data points, and compare hundreds of millions of possible solutions in the time it takes to pick a flight to Paris and book a room at the George V... that's more like it.

Unfortunately, any so-called “AI” is totally limited by the ‘Wit & Wisdom’ of the Modeling Chef, his command of the mathematical tools, his choice of tools best suited for each task, and the order and limitations of when they come in. The power that can be unleashed for good, or profit ~ mind boggling.

Our version of AI is to use the right math and analysis to turn loose computing power that enables a master architect to design and use a massive mathematical assist on large data sets to Augment Intelligence and Experience to produce more accurate forecasting results, hence SFG practices "Mathematically Assisted Augmented Intelligence " ~ MAAI™

2) Why Artificial Intelligence is limited?

Consider first, tools available in the past, and then, how far we have come when tools are in skilled hands.

IBM 360 ~ Could process huge data sets that needed to be put on punched cards, and allowed millions of records processed and calculated.

Burrows 7700 ~ Possible to run 400 equation models for the US Economy from a telephone dial up at DRI.

MS & Mac ~ Desktops and Laptops surpass the IMB 360 by a wide margin.

iPhone ~ More power in the palm of you hand than giant computers in the past.

M1 Chip on MacBook ~ Powerful enough to run massive interactive models with all the AI Wisdom Apps™ interconnected as Council of Wise Savants.

Cray Computer ~ Your supposedly 18 Character pass code is busted, and your computer drained of all files, and erased ~ all in the time it takes to go to the bathroom and back.

Quantum Computers ~ Bit Coins can be instantly hacked, stolen, or erased. The only data that is safe is never connected to the internet, and data transfer should only be between clean, physically discontended systems that never use Light cable or WiFi, with thick Faraday cages surrounding all sensitive systems.

The computational power is there, but that said, AI is very limited, because its power is a function of the knowledge and skill of its human creator.

Consider AI at Several Levels ~ And, why we think "MAAI™" ~ Mathematically Assisted Augmented Intelligence

Level One: AI tools have been created for others to use. The tools are used by people who did not design the tools or know what they were designed to accomplish, and all to often, an inappropriate tool is used for a task, all but

guaranteeing the incorrect outcome. The results of using a tools not designed for a specific task could be positive, but likely never as good as one would hope. Even simple workmen have a very large tool kit! One size does not fit all.

Level Two: The tools are used by those who built the tools. The builder of the tool understands why and how the tool works, so they know when and how to use the tools. The results are an order of magnitude better than Level One.

Level Three: A Mathematical Designer / Architect who understands the math and power of the math - able to look at and understand an entire system that needs to be modeled properly. The Architect invents the tools and designs them for the task at hand, so a Level Two guy can build the needed tools. With instructions from the designer, it becomes clear to a builder how the tools ~ the Wisdom Apps™ ~ should work together, set up in the right order and the right way.

Most AI shops only have a bunch of Level One guys, and maybe a single Level Two guy in house. Level Threes... nowhere to be found.

3) How Can the world Chess Champion Magnus Carlsen beat the computer?

Chess played by Grand Masters will result in a draw if both play defensive and refuse to make mistakes. To enable a win, a player needs to take a risk and “trick the other side” to take advantage of a weakness that is a trap. Magnus can see what the computer programmer on the other side did and how he thought. That computer has already been programmed. Magnus has the ability to reprogram from defensive to offense as often as he likes because HE IS THE COMPUTER and HE IS THE PROGRAMMER. Just when the opposing computer predicts zig, he zags... and game over.

4) What is a Self-Learning model? Can they work, and why most fail at the worst possible moment.

Self-learning comes with the realization that most models fit to the past, and project a trend into the future. History teaches us that this works fine, until the day that there is a sudden crash and change in direction. It's like a Pole Shift of North and South Poles. All the models become horrible wrong. So self-learning builds the ability to change trends quickly when certain triggers are hit. But unfortunately, you can't get an M1 Chip or Cray Computer to actually feel fear or greed and sudden mood swings as when greed turns to fear, and leverage and margin calls signal only a few lackey souls will survive. Worse yet, the massive change can be a major event, that has been totally unforeseen, and the model has no way of factoring in.

While the models today may claim to be self-learning, consider instead the value add of Adult Supervision from those who have lived many years in markets... who have respect for prudent leverage, and expectations of greed tempered by the memory of burned fingers.

See the Movie Margin Call ~ https://en.wikipedia.org/wiki/Margin_Call

5) How Could Management at Zillow lose \$ 500,000,000 so quickly and easily?

Zillow bought into the fallacy of comparative local pricing between what appeared on paper to be rather similar properties when in fact, there were masked material differences that could only be discerned by local knowledge of an area, neighborhood, home condition, buyer preference and a host of other factors. Moreover, their choice of data and math were fundamentally flawed. They certainly did not factor in the moral hazard of sellers smart enough to “pick them off and dump to them” a Dog of a House.

6) Rise of AI. Why most AI models still fail. (Hint ~ It’s not the math and the machine, it is the failings of the programmers writing the models!)

The flaw is the programmers know so little about an industry of finance that they have to be led by the nose to start thinking about what information is relevant, and then, where to find it. Knowing what is relevant, why it is relevant, and how and when it is relevant can take years with memories of mistakes learned, and knowledge that there are risks of both the known unknowns, and unknown unknowns.

There is a need for adult supervision in designing the models. A few of the traits necessary... Experience, Wisdom, Deep Knowledge of Advanced Math, and where and when it proves useful, and then, sufficient Common Sense to see when the model is generating irrational outcomes and has serious design flaws.

If You Can’t Pick the Right Talent, Don’t Even Try...

7) SFG’s AI Wisdom APPs

Finance companies and their underlying needs share lot in common. Building Core APPs for various issues is an efficient way to creating modeling building blocks. Yet for each asset type, their models will have significant differences, and the APPs and in fact, the total system, will likely need to be made Bespoke to have optimal efficiency. APPs need to be modified for each special use.

A Few of the Wisdom APPs as a Sample... What Are they? What do they do? How do they work? How do you use them? What is the Answer?

a.) Data Lidar ~ Finding the Right Data. Hidden under the clouds, foliage and earth lives valuable data that can be sensed with the right techniques.

b.) Missing Variable Analysis ~ “Something important is missing” from the model and how to find it. Outlying planets were known to exist because of their small gravitational force on other planets orbits.

c.) Multivariate Regression Analysis ~ R Squared , Power, Limitations, and all to often tragic results at economic turning points. Correlation is not always causation, and correlation may be related to missing variables, or factors like inflation pushing up all numbers.

d.) Dynamic Programming, Linear & Non- linear Programming. ~ Linear Algebra & Eigen Vectors, Maximization, Shadow Prices... Getting in the good stuff for optimization.

e.) Rediscovery of Bayesian Analysis. ~ Now possible because the computing power of even an M1 chip has advanced so far. With Bayesian skills, it was Easy Money in Blackjack in Aruba that paid the bills through college without having a team to count cards like the MIT Geeks in Las Vegas.

And, the Monty Hall Paradox... a simple example of why ninety percent of even senior people on Wall Street should not be allowed to manage your money.

f.) Bayesian Analysis. The “Rubric’s Cube” & “Nesting Russian Dolls” ~ For data sorting problems that need real computing power.

g.) Computational Allegories and the Doors of Perception & Total Viability.

h.) Known Unknowns... Unknown Unknowns... Hubris for Beginners ~ The brighter you are, the more you will be humbled by the Icarus curse of the truly bright. The lesson to learn is humble wisdom ~ that here is always something that appears suddenly and gives you no chance to adjust.

i.) Data & Extracting the Information ~ “In the Land of the Blind, the One-Eyed Man is King”

j.) He who has the best data, can win ~ But only if they have the best model.

k.) Finding the Best Data. How to do that!

l.) Mapping Technology ~ Brought to multiple dimensions, provides another way to see Bayesian Solutions if you can visualize in multiple dimensions.

m.) AI Forecasting for Both Micro & Macro ~ Micro Data and local economics are where the largest benefits from unique data lie ~ from fascinating differences in habit, culture, ethics, weather and other factors that affect local economics. There are massive differences in human and loan behavior in short distances, and surprising similar behavior in similar people over long distances.

n.) Marco Data ~ General economic conditions effect all, and trends in inflation, income, interest rates, employment, unemployment, all have massive impact ~ these multiple variables must be modeled in.

o) Merging Micro & Marco Information ~ Both an Art and a Science, as effects can build up over time, or suddenly build to a breaking point.

8) So, How to the Wisdom APPs work? ~ Like a \$20,000,000 Swiss Watch or top end Porsche, they work very well, thank you!

Oh, Sorry... you want to know How the Wisdom Apps are Built with the Type of Math and actual Formulas, Assumptions, and Logic? You want the blue prints, and then maybe take a stab at building you own? Well, buy the Swiss Watch and buy the Porsche first. When you can reverse engineer those and make a better watch and better car, come back. In the four or five years that would pass, we could give you the old model with the old general data, without the turbo charger, and refined data, and by the time you get back, we will be on the two more versions of the platform ahead. Meanwhile the world will be a very different. yet changing rapidly. Can you afford to take a chance and wait five years for your Propeller Heads & Geeks with no real knowledge of real estate and finance, and no in depth understanding of how the math was derived and which elements employed for what purpose to generate the machine that works? When the Wisdom App's could save millions right now?

And, can the Wisdom APPs be used together? Yes, each one is programmed to link with other APPs and with "API" ~ the acronym for Application Programming Interface, which is a software intermediary that allows two applications to talk to each other.

What happened when they are linked together? It is like getting access to a circle of very experienced and extraordinary savants, who never get tired, and can flash through a billion data points, and a hundred billion calculations faster than you

can book a flight to Paris and the room at the George V. The App Savants now work together as a team. Their conversations are enlightening!

Want to listen in? Do you speak machine language? Now reverse engineering our Intellectual Property ("IP") got even harder if we just use it and give you the answers you are looking for. Being very bright, with just the answers you can work backward to exactly how each Wisdom App works individually, and how they are programmed to work together in the right order to get the optimal result.

Please have at it. The hobby over here is solving previously insoluble multidimensional puzzles!

Now, if you got the question of the Monty Hall Paradox wrong, or know the correct answer but do not know the logic and mathematical proof of the right answer and can lay it out you are in the Ninety Percent of Wall Street professionals that should not manage other people's money, or leave the math behind what you are showing to those that truly understand the math.

If you did not focus on Monty Hall Paradox above, you missed one of the most profound forecasting observations of all time. "Knowing the value and timing of additional information, and how to use it."

9) How do you use the Suite of Wisdom APPs On a Real-World Economic Forecasting Problem?

Take San Francisco Housing Prices and look at examples relative to deciding how to buy houses, fix them up, and sell them to make the most money. This is a Multi-Trillion Dollar asset class so it should have some passing general interest to investors who have investments in that segment of the mark. BTW ~ as interest rates rise, there will likely be in excess of \$2 to \$3 Trillion of wealth in Single Family Housing that will vanish or change hands.

The current value of outstanding SF mortgaged debt is very close to \$12 Trillion.

The Report Is for Paid Subscribers only... If you would like to chat, Just let us know...

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Appendix ~ Richard Benson ~ Forecasting History / Mathematical Economics

1.) Mathematical Economics got its jumpstart post WWI, with Nobel Prize Winning Wassily Leontief. (https://en.wikipedia.org/wiki/Wassily_Leontief). Professor Leontief did deep studies into input output analysis, factors of production and transform analysis with Linear & Non-Linear programming and Dynamic Programming for Optimization and the creation of shadow processes that showed the quality and value of a scarce resource.

It was the rage in the Cold War, when I studied advance math at University of Wisconsin, Madison, funded by the Army Math Research Center before being invited to study under Leontief at Harvard by his Protégé, R H Day from the US Military who was then teaching at Madison.

2.) Arriving at Harvard as one of 12 Students in 1976, but the only one in Math, Leontief had left after 44 years, and I was moved over to work with Otto Eckstein

https://en.wikipedia.org/wiki/Otto_Eckstein

who was then pioneering Econometrics and building 400 Multivariate equation models of the US Economy. Fortunately, PhD students at Harvard were give access to read anything, so I spent more time at the Harvard Business School than the MBAs, read a lot of monetary history, and worked at HBS on the glaring flaws in GAAP accounting under high inflation, (which is again useful today) as well as monetary theory, and modeling on sound data, and an imitate understanding of the financial system.

3.) DRI was the first “ Dot.COM” and had a great following in 1979. Otto Eckstein, Henry Kissinger and Don Marron, the founders of DRI, sold it to McGraw-Hill for over \$120 Million.

4.) Don Marron (https://en.wikipedia.org/wiki/Donald_B._Marron_Sr) was Chairman of Paine Webber, and founded the very successful Light Year Capital. Otto Eckstein would have likely won the Nobel Prize in Economics if he had not died at a young age of cancer.

5.) It was good fortune to move on from DRI as it was crystal clear that using bad US government data could only produce at best, mediocre results.

6.) Heavily recruited to help Merrill Lunch build their Black Box Economic Model, after joining the firm, flaws became evident. If the modeling being done did not really work the first time with bad data on macroeconomics, it was unlikely to work the second time.

7.) Coming to Wall Street., I joined Chase Bank as a Trading Desk Economist to work on the trading floor, just after Paul Volker left Chase to become Chairman of the Fed, and then transitioned into asset securitization at groups like Citibank, Bear Stearns, and E.F. Hutton before shifting to special situations in FinCo's while building a Capital Market Arbitrage Practice.

8.) And today, we distribute private research along with a market letter based on our knowledge of the structure of the capital markets, fallible human behavior, views on what is happening, and why certain material facts out there just can't be ignored.

Working With Specialty Finance Group.

Our core business is investment Banking – Raising equity, Sub-Debt & Senior Credit for FinCos. Long standing relationships are valued greatly, and, we appreciate the opportunity to provide services to new clients as well.

Our Motto ~ The Brightest Guy in The Room is The Quiet One Listening and Learning Something He Did Not Know...We Prefer to Listen And Are Happy to Chat.

To discuss engagement availabilities,

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