

The Art and Science of forecasting for Daily Life

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Colloquium Series

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Padang, May 2017

Pantun

Sirih berlipat sirih pinang

Sirih dari Pulau Mutiara

Pemanis kata selamat datang

Awal bismillah pembuka bicara

Tanjung Datok airnya biru,

Kampung getir anak nelayan,

Terlanjur duduk menuntut ilmu,

Pasir sebutir dijadikan intan.

Outline Presentation

- Introduction
- Why I am interested with forecasting
- The related issues in the forecasting
- Statistical Research Diversity
- Conclusion

Motivation

- Hai orang - orang yang beriman, apabila kamu pergi di jalan Allah, maka lakukanlah **Tabbyun** (**QS: An Nisa; 4: 94**)
- **At-Tabayyun:** mencari kejelasan hakekat sesuatu atau kebenaran suatu fakta dengan teliti, seksama dan hati-hati (Tafsir Al-Quran, Depag, 2004)
- **Ber-Intizhar-lah** kamu terhadap segala macam gejala di Langit dan di Bumi. (Bila tidak demikian) tidaklah memberi mamfaat sebagai tanda-tanda kekuasaan Allah untuk orang-orang yang beriman (QS: Yunus; 10 : 101)
- **Intizhar:** melakukan pengamatan terhadap kenyataan (realitas) atau pengumpulan data, kemudian dilakukan analisa, dan menarik kesimpulan.

Motivation

1

- Allah akan meninggikan orang-orang yang beriman di antara kamu dan orang-orang yang menuntut ilmu pengetahuan (belajar) beberapa derajat. Dan Allah Maha Mengetahui apa yang kamu kerjakan (QS: 58; 11)

2

- Ilmu ada tiga tahapan, jika seseorang memasuki tahapan yang pertama, ia akan sombong. Jika ia memasuki tahapan yang kedua, ia akan mulai tawadhu (rendah hati). Dan jika memasuki tahapan yang ketiga, ia akan merasa dirinya tidak ada apa-apanya. [Umar Bin Khatab]

WELCOME TO UTM, MALAYSIA



Kerana Tuhan untuk manusia

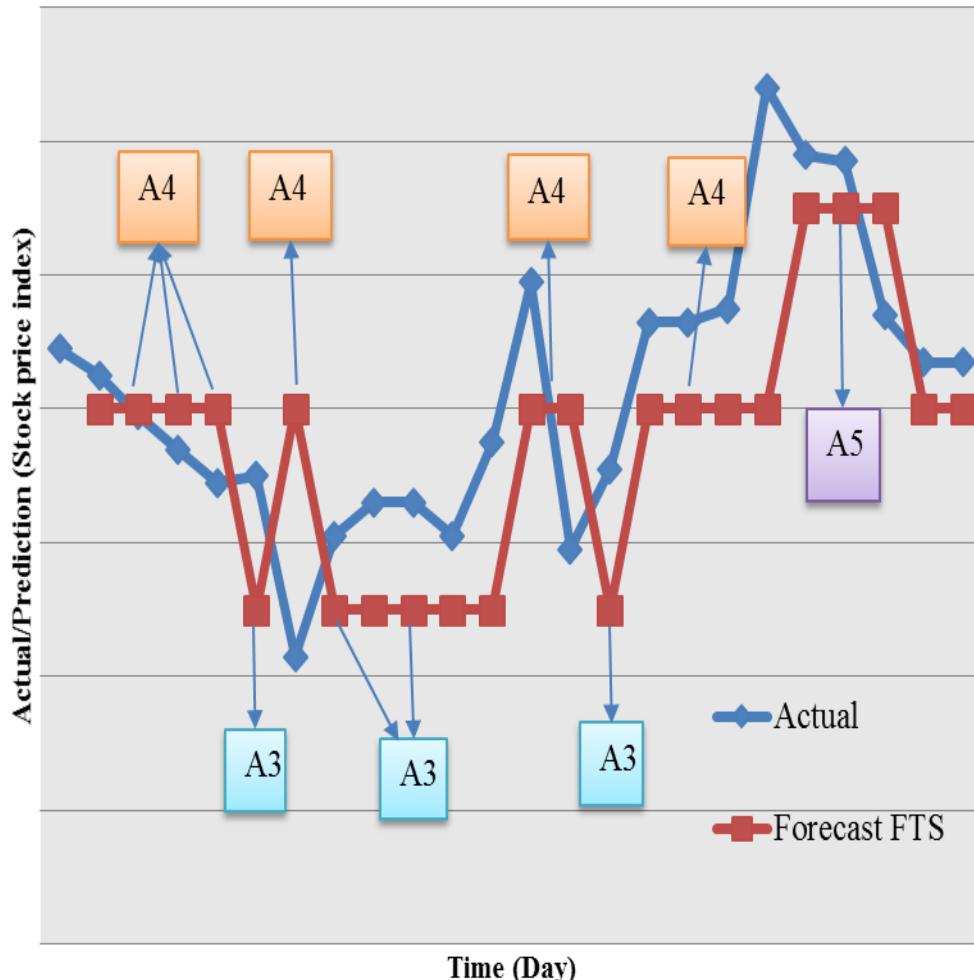
Nilai-nilai pembelajaran



Tunjukkan minat yang mendalam terhadap bidang yang Anda pilih dan respect dengan lawan bicara (siapa pun itu).
(Komunikasi Verbal)

Tulislah email secara santun dan well educated serta tunjukkan Anda sangat tertarik dengan bidang itu.
(Komunikasi Non-verbal)

Fitted curve of actual and previous FTS

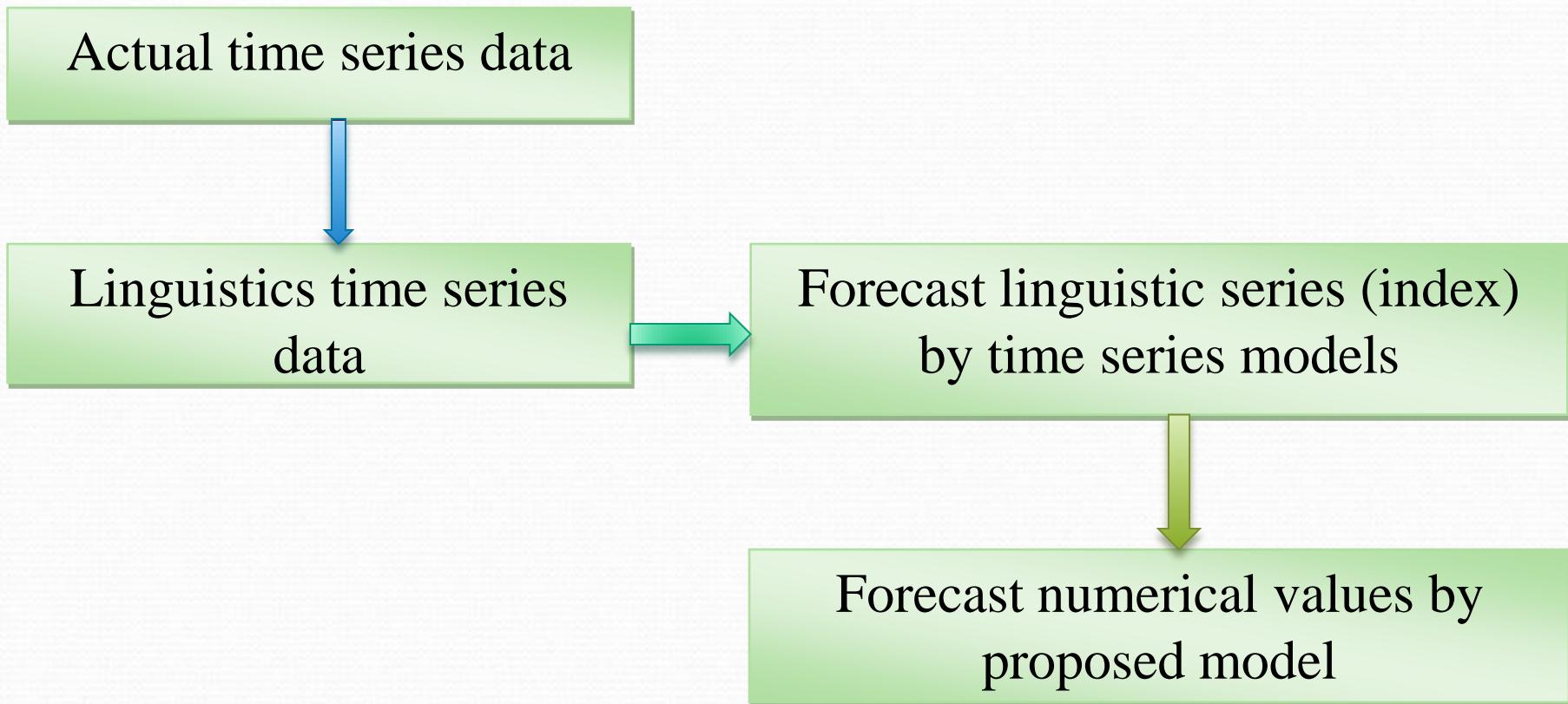


Actual data
(Numerical data)

Linguistics time
series data (Song &
Chissom 1993-1994)

Fuzzification and
Modelling

Continue my PhD



Suka Duka selama PhD

Suka

Direct
continue and
extend master
topic

Graduate on time
(3Y, 7M)

LPDP
Dissertation Fund
Paper publication

Duka

Grant not
available
after 1 year

Part time job
almost 3 years
and return-
back between
universities

My motto

R = Responsibility

I = Integrity

S = Super hard working

W = Will

If there is a will, there is a way

A = Ambitious

N = Never give up

My dream come true



Selalu ingat...

- Bahwa ILMU itu milik ALLAH, jadi memohonlah untuk diberikan dan diridhai.
- Kesungguhan orang tua/wali untuk membiayai kuliah kalau bisa usahakan “=“ kesungguhan dalam belajar/kuliah.
- Para guru dan dosen yang sudah mencurahkan ilmu dan pengalamannya serta jaga hubungan baik dengan mereka.

The art of forecasting

Ascending.



(Same figure raised.)



(Again raised.)



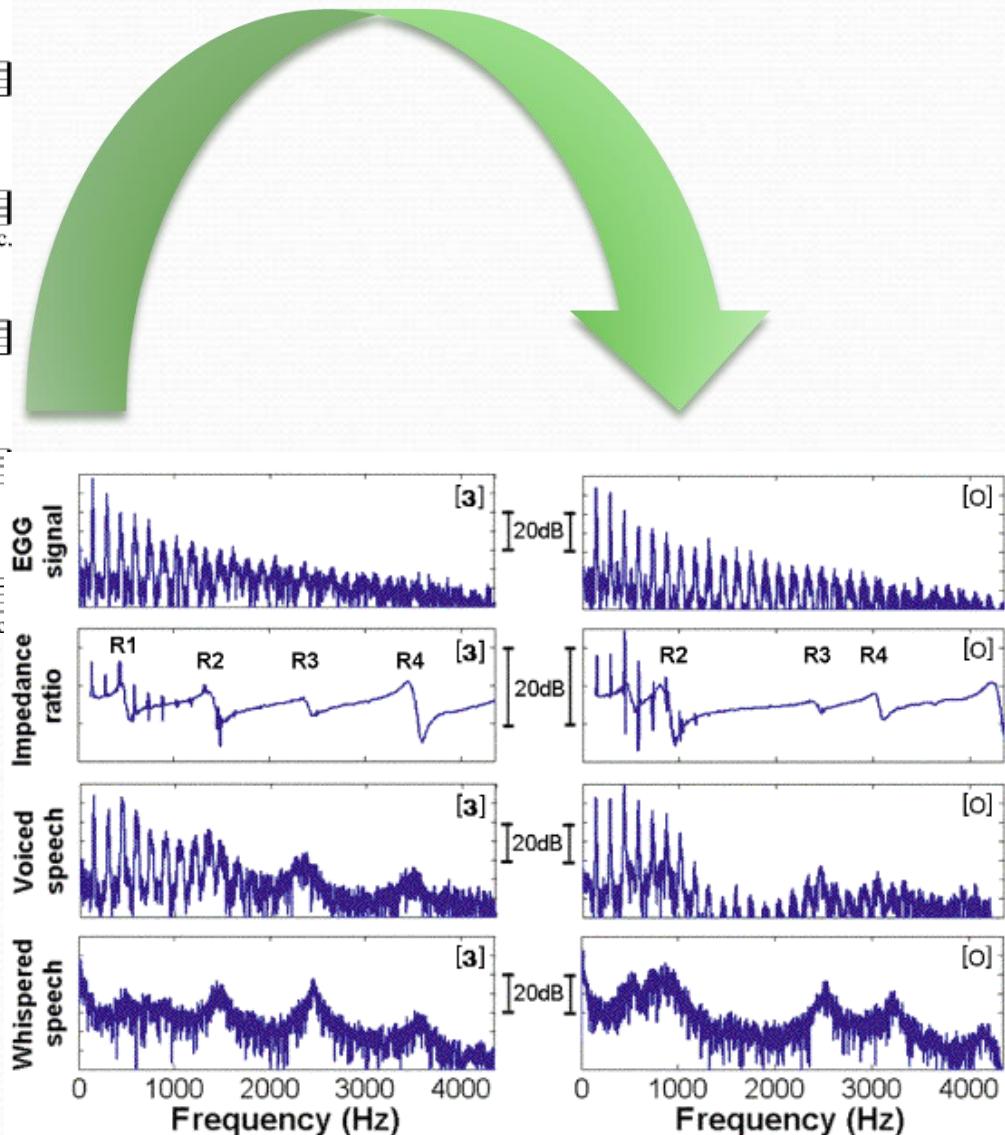
Descending.



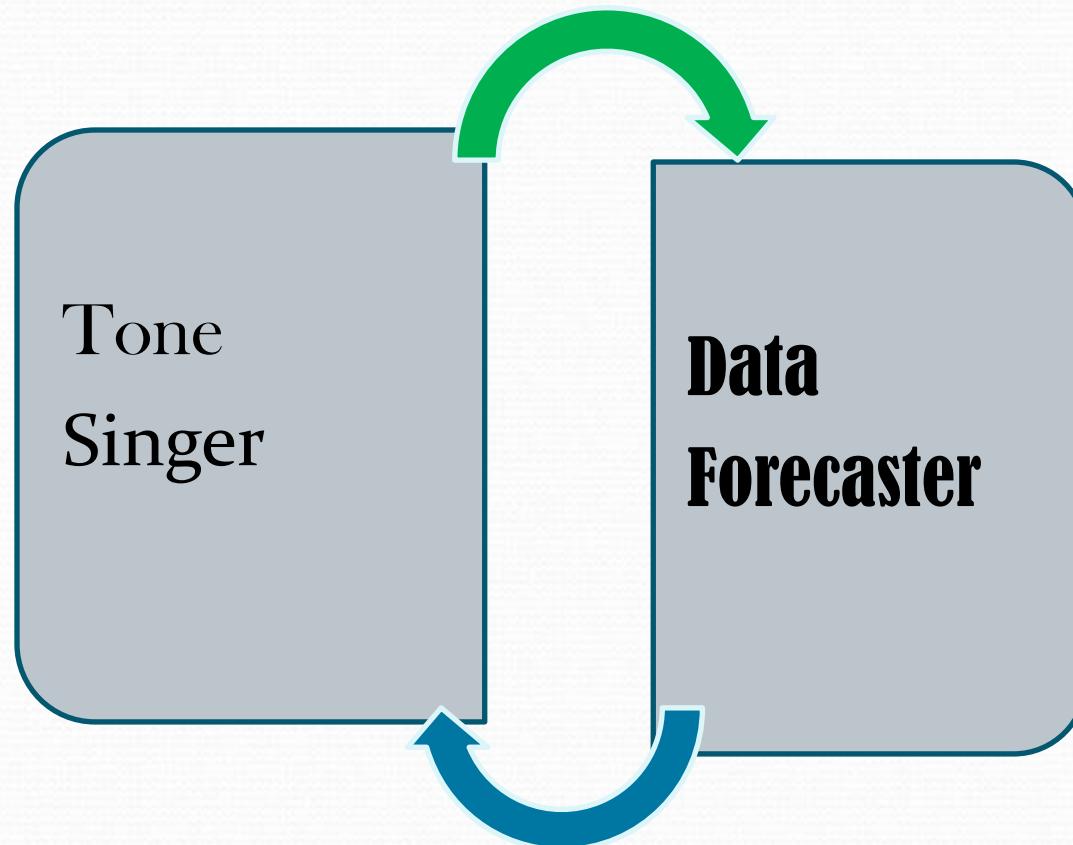
(Same, tone lower.)



(Still lower.)



The art of forecasting



Forecasting and Planning

↗ **The Future Can Not Be Predicted** ↘ Robert T. Kiyosaki
books

✓ **The Future Can Not Be Predicted** “*PRECISELY*” ✓
New Paradigm

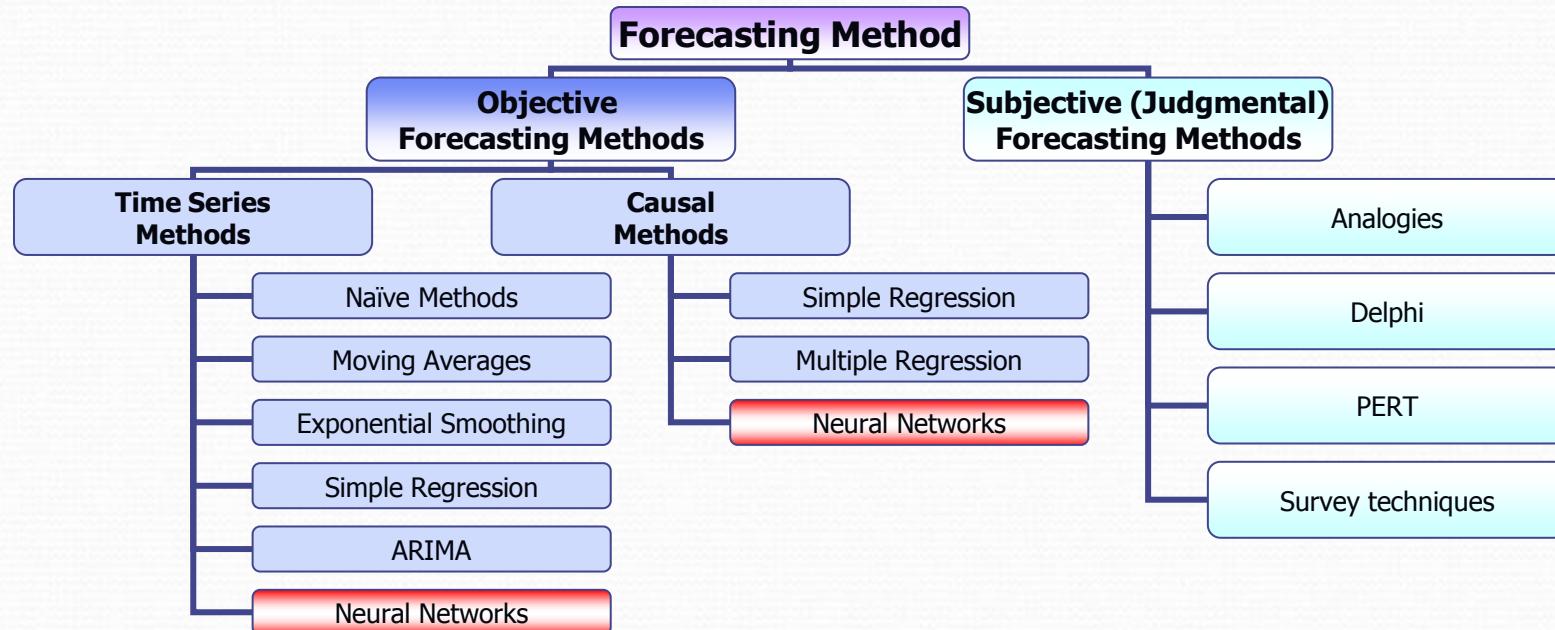
★ Peramalan merupakan alat bantu yang penting dalam perencanaan yang EFEKTIF dan EFISIEN.

A PERSON WHO DOESN'T CARE ABOUT "THE PAST"
IS A PERSON WHO DOESN'T HAVE "THE FUTURE"

The Issues in the Forecasting

- The data collection (experimental and published types).
- The randomness, the vagueness, the possibility of data (Watada *et al.* 2009).
- The forecasting accuracy.
- The systematic and appropriate approach/model.
- Friendly user.

General Forecasting



Quantitative Forecasting Models

Causal
Model

Regression
Models

Input-output
Model

Econometrics
Model

Time
series
Model

Trend series
regression Model

Box-Jenkins
Model

Dynamic
Regression Model

Intervention
Model

Example

Population 2017,
Price 2017,
Advertising
2017, ...



... Model?



Sales at
2017

Sales 1990, ...,
sales 2001, ...,
sales 2016



... Model?



Sales at
2017

...
Model?

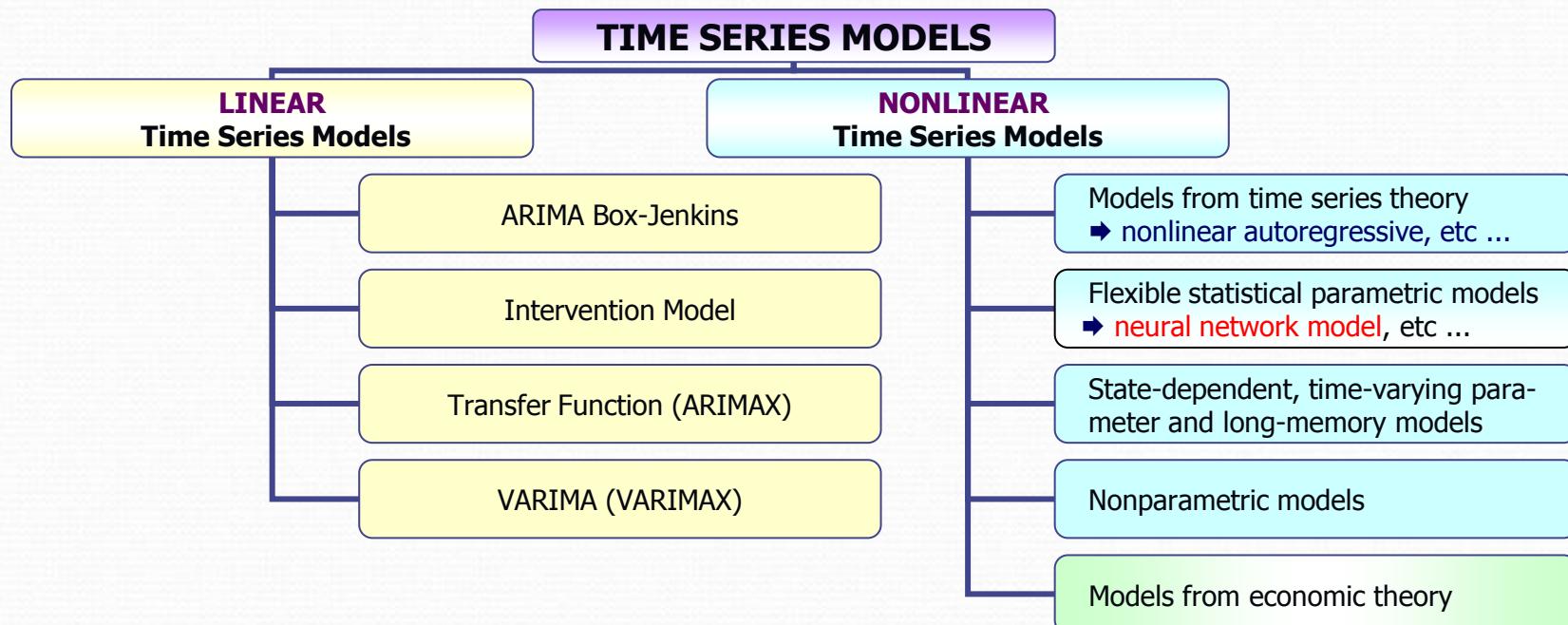


...
Model?

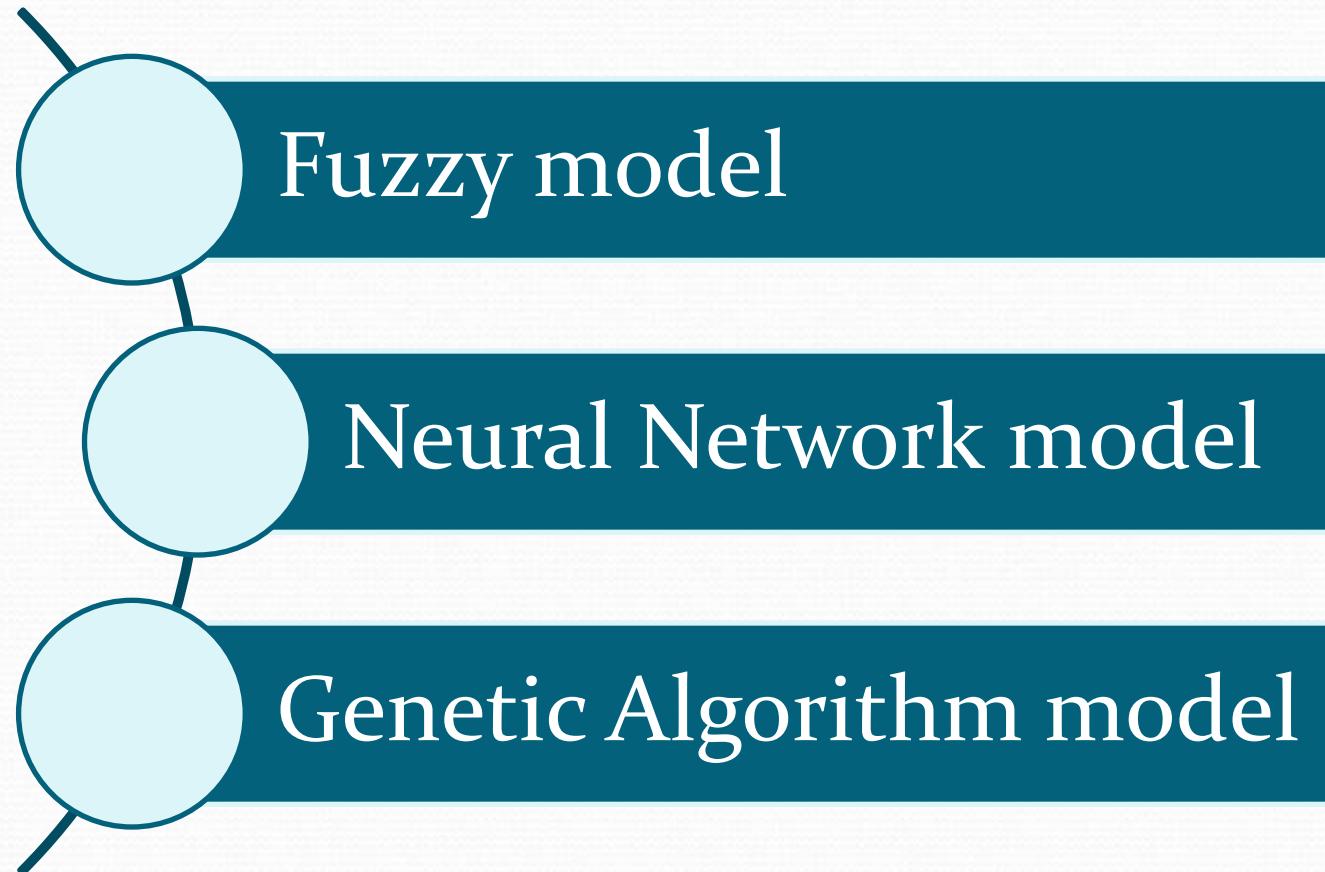


...
Model?

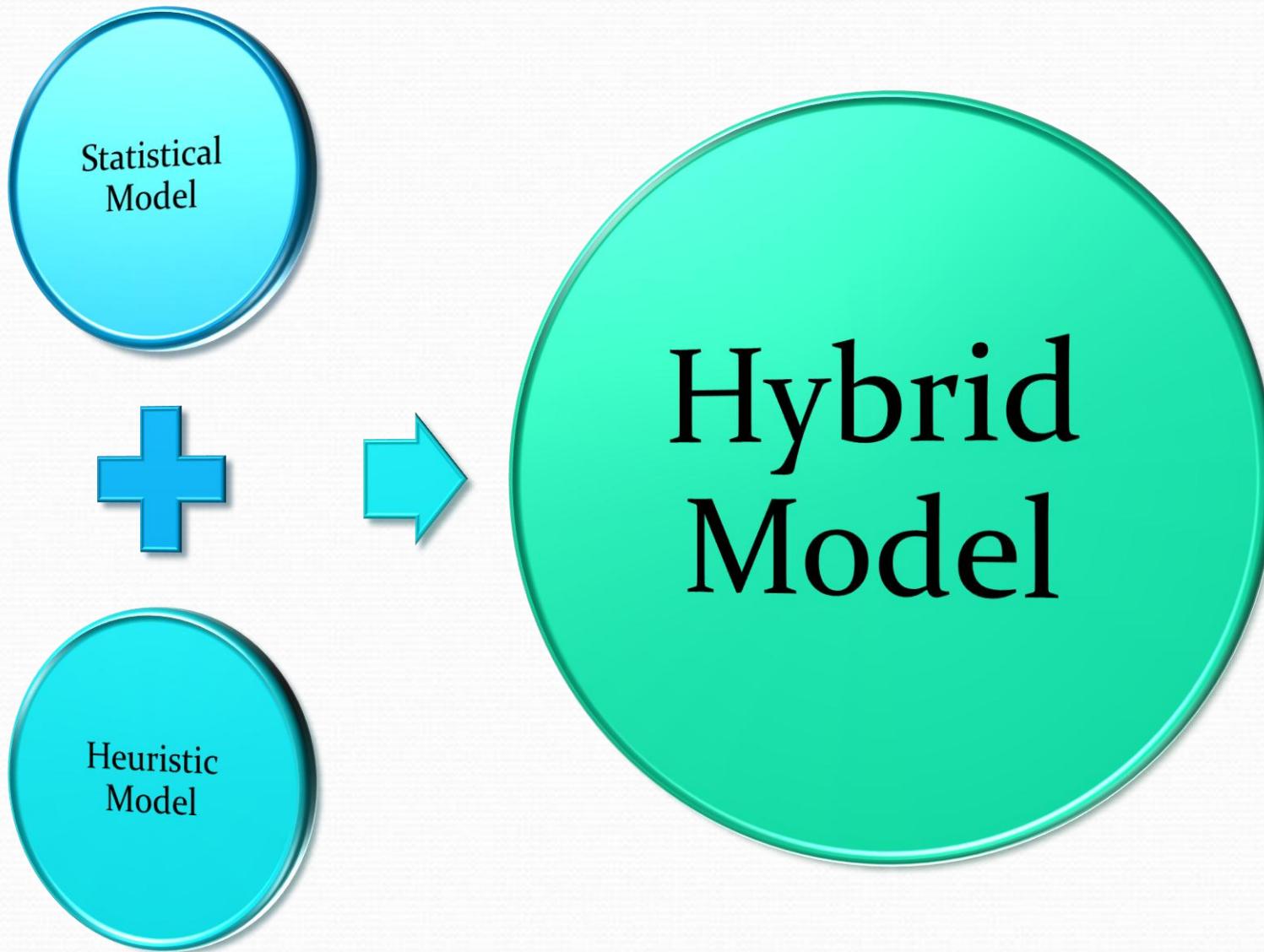
Forecasting Model (Time series data)



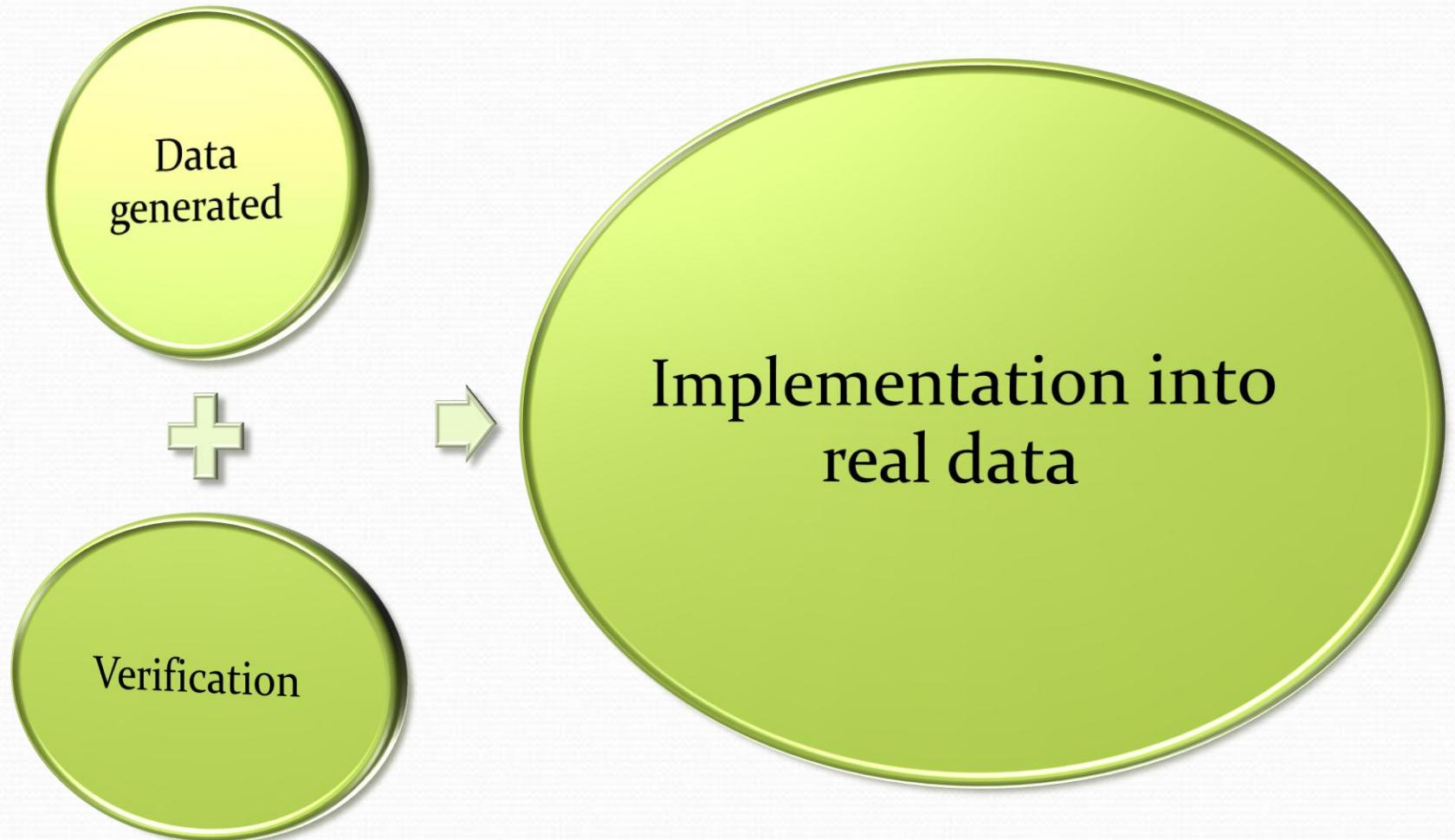
Heuristic (AI) Forecasting Models

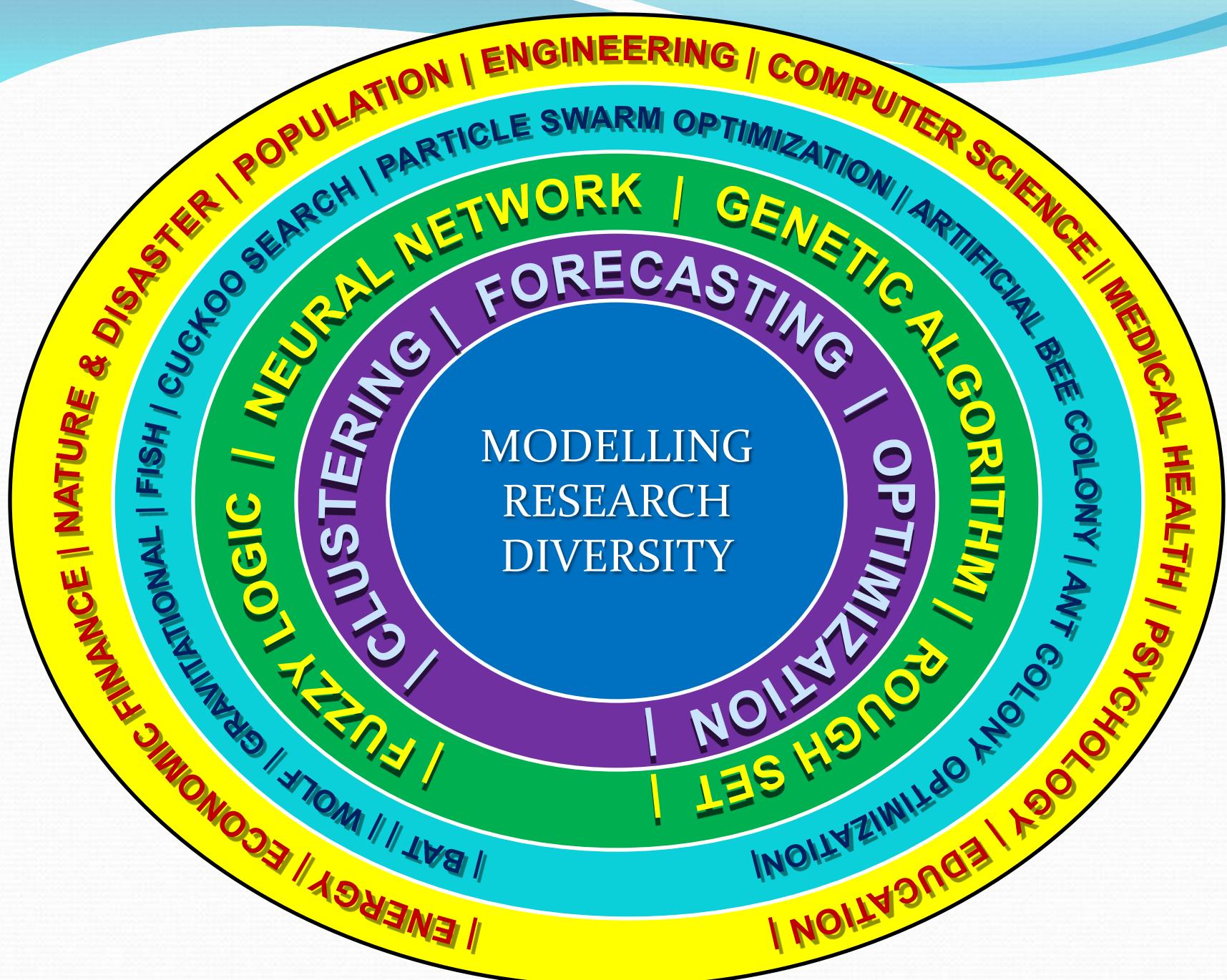


Hybrid Forecasting Models



Model Building





Conclusion

- Read more and update your knowledge and skill in the forecasting area. Many articles, papers, book chapters have discussed and presented the forecasting models. These articles can be downloaded through well established publishers, such as, IEEE explore, Elsevier, Willey, World Scientific, Taylor and Francis and InderScience.

THE ART AND SCIENCE OF THE FORECASTING FOR DAILY LIFE

A black and white photograph of a person's hands. The left hand is holding a magnifying glass, which is focused on a colorful landscape photograph of snow-capped mountains and a forest. The landscape photo shows a wide valley with green and yellow trees in the foreground, leading up to rugged, rocky mountains under a blue sky with wispy clouds.

Thank you..

For lending your eyes & ears.