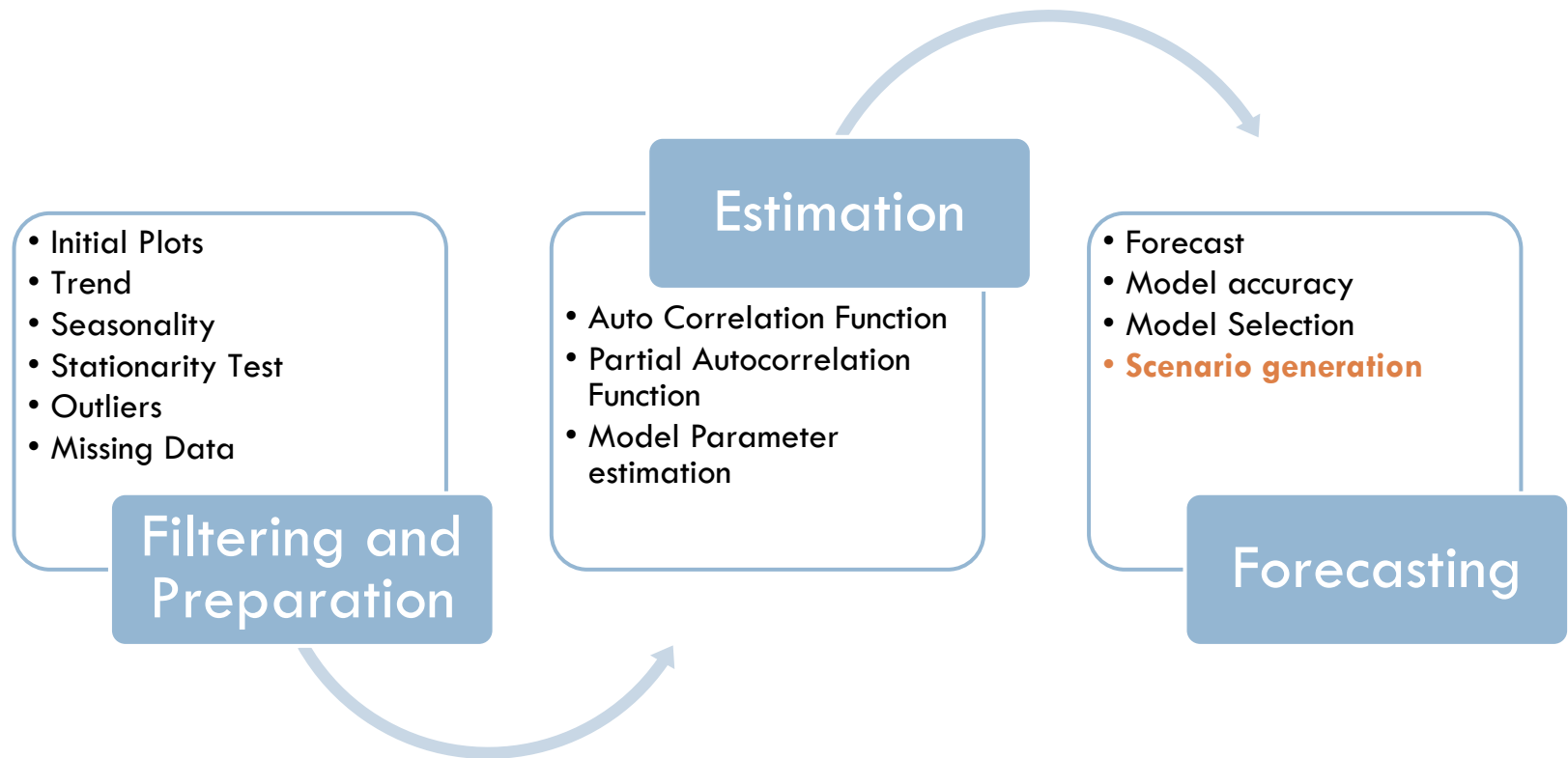# TIME SERIES ANALYSIS
FOR ENERGY AND ENVIRONMENT APPLICATIONS

COURSE RECAP

Prof. Luana Medeiros Marangon Lima, Ph.D.

What have we learned in TSA?

Filtering and Preparation
- Initial Plots
- Trend
- Seasonality
- Stationarity Test
- Outliers
- Missing Data

Estimation
- Auto Correlation Function
- Partial Autocorrelation Function
- Model Parameter estimation

Forecasting
- Forecast
- Model accuracy
- Model Selection
- **Scenario generation**

Platforms/Language

Models Recap

- ARIMA and its variations
- SARIMA
- Simple average techniques, Naïve
- Exponential Smoothing
- ARIMA + Fourier
- State Space Models
    - Local level, linear trend, basic structure model,
    - Exponential smoothing, ETS
    - TBATS
- AR neural networks

You're rocking Kaggle!

#	Team	Members	Score	Entries	Last	Join
1	Will Lin		0.0998	1	1d	
2	McNeillTuratkhan		0.1031	1	14h	
3	Jaimie and Emma		0.1112	4	1d	
4	Kagiliery Zhou		0.1159	1	2d	
5	Faustin&Yilun		0.1187	3	2d	
6	Chenjia,Shubhangi,Xiyue Zhang		0.1397	2	3d	
7	Liaoski		0.1435	3	17h	
8	Ayush Gupta & Haochong Xia		0.1552	2	3d	
9	Sai & Vinny		0.1570	1	1h	
	submission_naive.csv		0.1602			
10	Aditi and Cara		0.1633	1	20h	
11	Meera Ayyagari		0.3687	1	21h	

Coming up: Project presentations

Group	Member 1	Member 2	Member 3	Dur	Cum	Date	Start	End
G1	Ina	Sai	Meera	6	8	16-Apr	11:45 AM	11:53 AM
G2	Cara	Vinny	Jaimie	6	16	16-Apr	11:53 AM	12:01 PM
G3	Samantha	Drew	Faustin	6	24	16-Apr	12:01 PM	12:09 PM
G4	Emma	Jenn		6	32	16-Apr	12:09 PM	12:17 PM
G5	Cynthia	Will	Chenjia	6	40	16-Apr	12:17 PM	12:25 PM
G6	Julia	Zhanylai	Yilun	6	48	16-Apr	12:25 PM	12:33 PM
G7	Aditi	Shubhangi	David	6	56	16-Apr	12:33 PM	12:41 PM
G8	Xiyue	Haochong	Ayush	6	64	16-Apr	12:41 PM	12:49 PM

THANK YOU TO OUR TA
Lynn Wu !!

Course Evaluations

- ENVIRON 797: Time Series Analysis for Energy and Environment Applications

- Instructor: Luana Lima

- TA: Lynn Wu