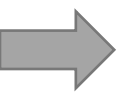


Welcome to the world of Econometrics





This is me!

Pedram Jahangiry

Professional Practice Assistant Professor, Project Mentor for the Analytics Solutions Center

Department(s):

Data Analytics and Information Systems



Contact Information

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[Personal Website](#)

[Curriculum Vitae](#)

Education

PhD, Economics, Arizona State University, 2017

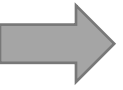
Master, Economics, Simon Fraser University, 2013

MBA, Sharif University, 2012

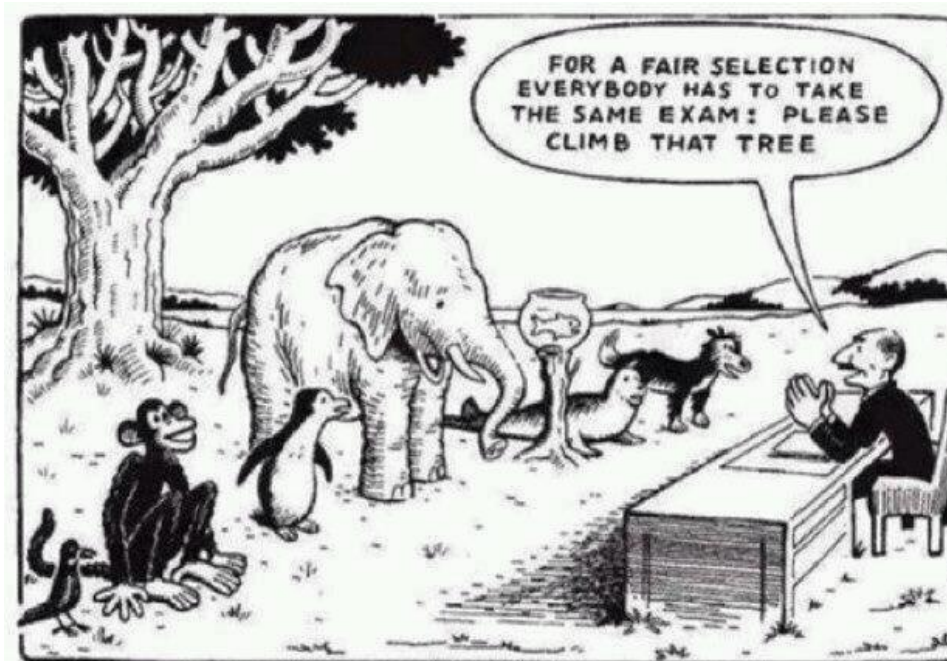
Industrial Engineering, IUST, 2009

Biography

Pedram Jahangiry, PhD, CFA, is an assistant professor in the Economics and Finance Department of the Jon M. Huntsman School of Business at Utah State University. Prior to joining the Huntsman School in 2018, Pedram was a research associate within Financial Modeling Group at BlackRock NYC. His research is involved in machine learning applications in finance, empirical asset pricing, and factor models.



My Teaching Philosophy



Our Education System

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."

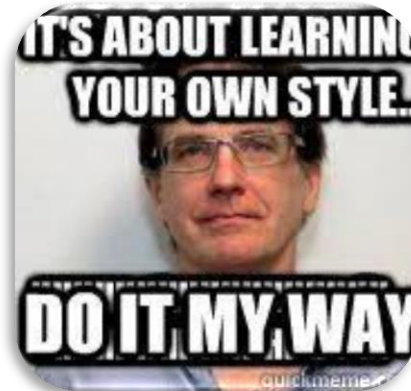
- Albert Einstein

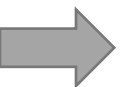
➔ My Teaching style!

More focus on interaction
and **application in class**
while putting more
lecture-like material
online

Classroom time will be
used more to **make**
mistakes in a safe
environment

Balancing learning-by-
studying with **learning-**
by-doing





What's on Canvas?

Fall 2022

Home

Syllabus

Announcements

Zoom

Pages

Assignments

Quizzes

Grades

People

My Media

Submit Grades to
Banner

Search

Ally Course
Accessibility Report

Discussions 









Files 

Collapse All

View Progress

+ Module



Navigation			✓	+	⋮
⋮	 Join the slack channel!	Aug 30 10 pts	✓		⋮
⋮	 Course schedule	↗	✓		⋮
⋮	 Office hours manager!	↗	✓		⋮
⋮	 OneNote (Whiteboard)	↗	✓		⋮
⋮	 GitHub repository for the course	↗	✓		⋮
⋮	 YouTube playlist	↗	✓		⋮
⋮	 Econometrics Cheatsheet (Formulas & R)	↗	✓		⋮
⋮	 The Teaching Assistants (TA)		✓		⋮

→ Big picture



What are we trying to do as a researcher?



Solve real world problems, right?



Is there a theory?

What is the **relationship** between

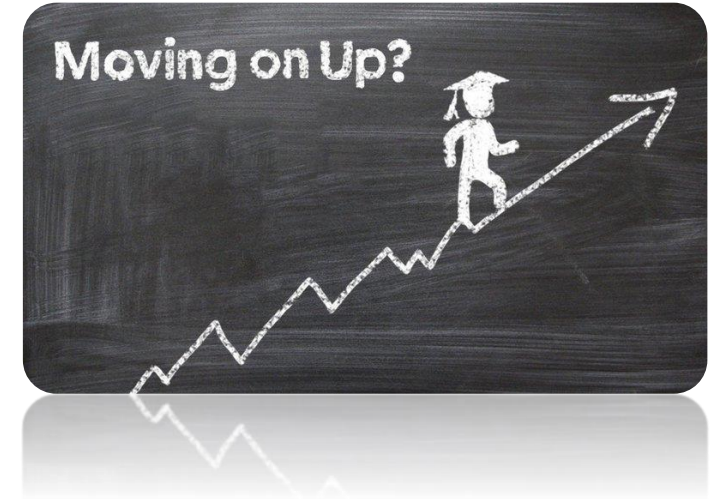
- Sales and advertisement / R&D expenditure / seasonality / industry / ... ?
- Quantity demanded and price / income / technology / price of competitors / ... ?
- Wage and education/ age/ gender/ experience/ ...?

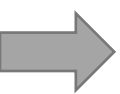
➔ A simple example

- Let's see if we can predict your future salary! (is there a theory?)
- What are the drivers:
 - Education, age, experience, IQ, ...
 - Ethnicity, race, gender, ...
 - Industry, location, working hours, ...
- Let's build a model (**assuming** a linear functional form!)

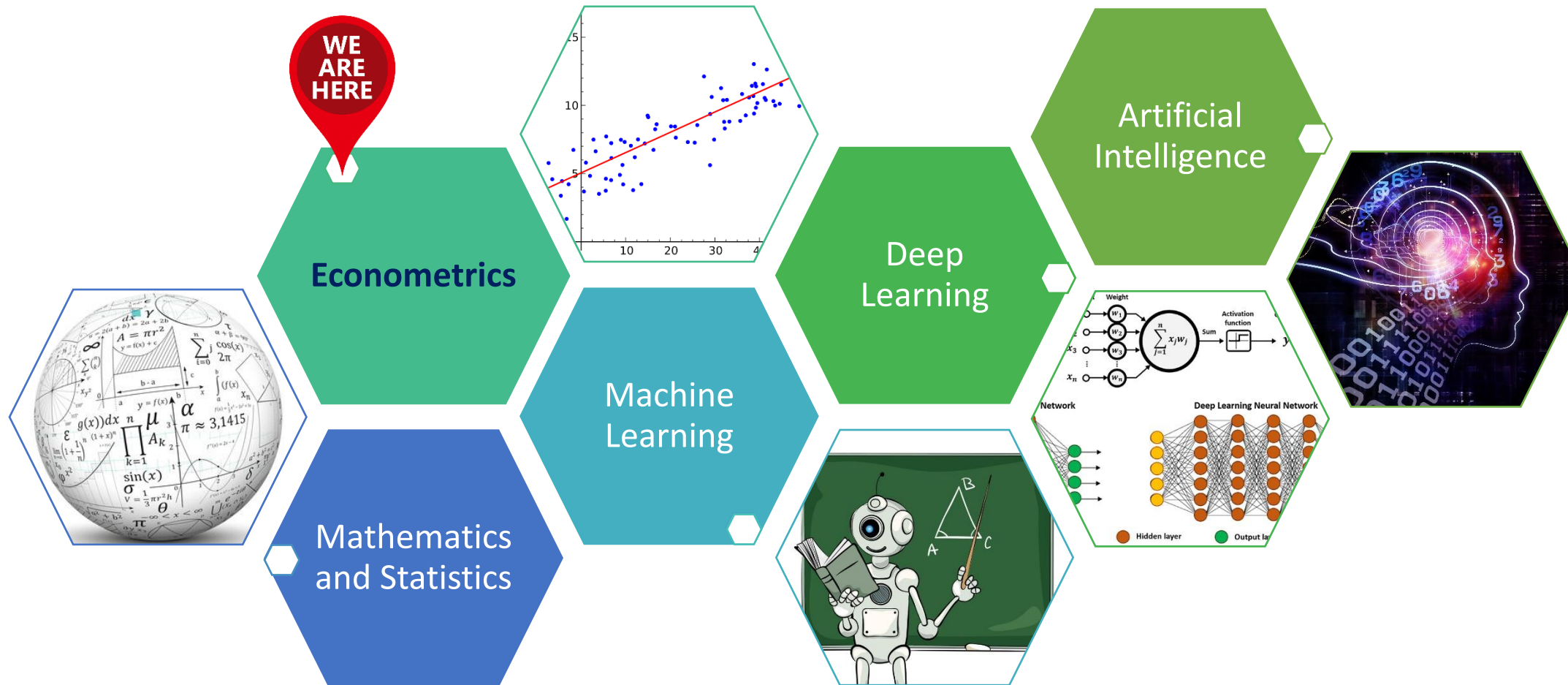
$$wage = \beta_0 + \beta_1 educ + \beta_2 age + \beta_3 exper + \beta_4 IQ + \dots + \beta_k hours + u$$

- Can you **interpret** this model? Do you care about the interpretability?
- Can you make **predictions** using your model?





Where we are?



➔ My Goal!



1. Enable you to become intelligent readers of others' econometric analysis.
Go beyond accepting all results at face value!
2. Teach you to conduct elementary econometric research.
3. Prepare you to take more advance courses like machine learning and deep learning.

➔ Why should I learn it?

- ✓ It is a bid deal
- ✓ Enables you to support your story with facts
- ✓ It is closely linked to data science
- ✓ Better Career Opportunities
- ✓ Better salaries
- ✓ Hedge against next recession

SIMPLE REGRESSION MODEL

$$Y = \beta_0 + \beta_1 X + u$$

Dependent Variable β_0 Intercept Parameter β_1 slope parameter X Independent Variable u error term

@unofficially econ

Limitations of Econometrics

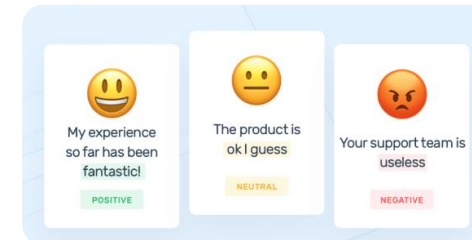
Econometrics can **only** handle structured data (tabular data)!

Structured Data

	A	B	C	D
1	Date	Account	Transaction Type	Amount
2	2017-01-12	123	Credit	6089.78
3	2017-01-12	123	Fee	9.99
4	2017-01-12	456	Debit	1997
5	2017-01-12	123	Debit	20996.12
6	2017-01-13	123	Debit	17
7	2017-01-13	123	Debit	914.36
8	2017-01-14	789	Credit	11314
9	2017-01-14	789	Fee	9.99
10	2017-01-14	456	Debit	15247.89
11	2017-01-14	123	Debit	671.28
12	2017-01-15	456	Credit	5072.1
13	2017-01-15	456	Fee	9.99
14	2017-01-16	456	Debit	5109.07
15	2017-01-19	123	Credit	482.01



Unstructured Data
(everything else!!)



You will be surprised to see what you can do
when someone is counting on you!

I am counting on YOU



