ML and FinTech

Huei-Wen Teng

Department of Information Management and Finance
National Yang Ming Chiao Tung University
https://hackmd.io/@hwteng/HyKOPoA6d

Education

Huei-Wen Teng Verify now

Professor

Hsinchu City, Taiwan, Taiwan · **Contact info**

368 connections

National Yang Ming Chiao Tung University

Penn State University

Education

Penn State University
Doctor of Philosophy (Ph.D.), Statistics
2005 - 2010

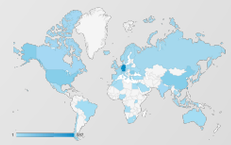
Skills: 資料分析

National Taiwan University
MBA, Finance
2002 - 2004

Skills: 資料分析

Johannes Kepler Universität Linz
Exchange Student
Aug 2000 - Jan 2001

National Taiwan University
Bachelor of Science (BS), Mathematics
1997 - 2001



Experience

Experience

National Central University
6 yrs 6 mos

- **Associate Professor**
  Aug 2016 - Jan 2017 · 6 mos

- **Assistant Professor**
  Aug 2010 - Jul 2016 · 6 yrs

  Research, teaching.

National Yang Ming Chiao Tung University
3 yrs 8 mos
Hsinchu City, Taiwan, Taiwan · On-site

- **Professor**
  Full-time
  Aug 2024 - Present · 2 mos

  Quantitative Finance and Monte Carlo Simulation

- **Associate Professor**
  Feb 2021 - Jul 2024 · 3 yrs 6 mos

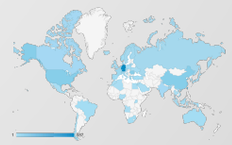
  Quantitative Finance and Monte Carlo Simulation

Experienced Researcher
IDA Institute Digital Assets · Part-time
Apr 2024 - Present · 6 mos
Bucharest, Romania · On-site

Associate Professor
National Chiao Tung University
Feb 2017 - Jan 2021 · 4 yrs
台灣 Taiwan 新竹市 · On-site

Outline

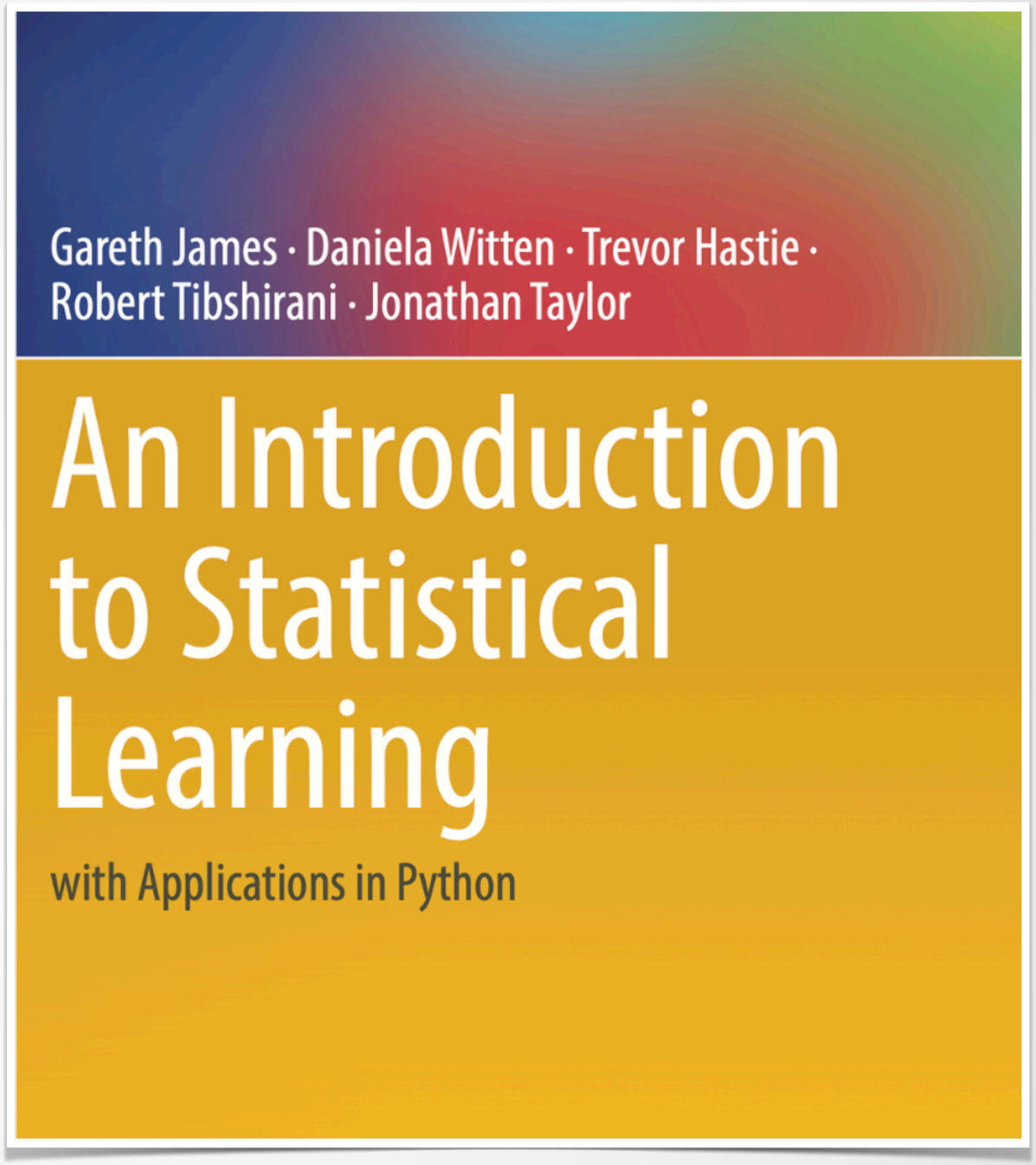
1. About ME
2. Syllabus
    - The course centers on data analytics within FinTech!
    - Infrastructure
    - Grading policies
3. FinTech
4. Stat, ML, and AI
5. More



Introduction

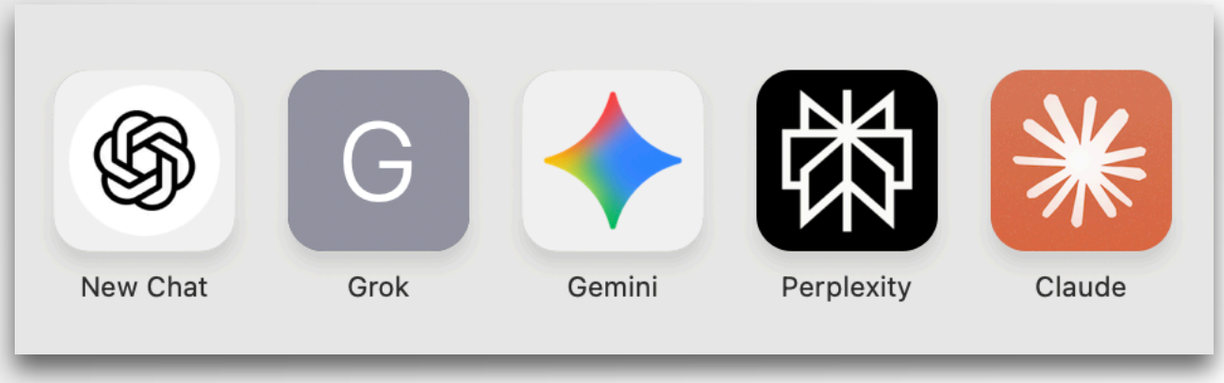
- MUST:
  - Laptop & internet: In-class exercises and presentations
- TA: 陳諾恆 (Jason Chan)

Email:
m97907555@gmail.com

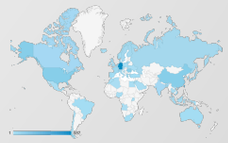


https://www.statlearning.com/

We embrace genAI!

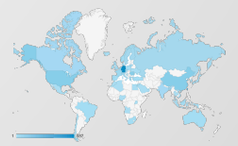


- We will use cold calls during course!



Infrastructure

- E3: Scores recording, announcement
- GitHUB
  - 202509-ML-FinTech
  - Individual folder: HW, paper presentation
  - Project folder: slides, data and codes
- Overleaf: Manuscripts in a professional writing style
- Teams: Online meeting (you need to use your NYCU m365 accounts)
- Link to collect info for GitHUB, overleaf

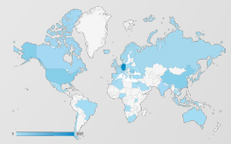


Grading policy

Index	Items	%	Datails
1	Participation	30%	papers, in-class exercise, HW presentation, summary of the course, and others. We will use cold calls during class.
2	Project	30%	
3	Exam	40%	* In class and with one A4 double-sided cheeting sheet!
	Total	**100%**	

Participation (may adjusted slightly later)

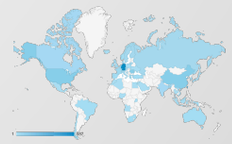
Index	%	Datails	
1	8%	papers	I will assign you to read papers and give you some questions to think about before class. Cold calls for students for feedback.
2	14%	HW, self introduction, and course summary	Upload your solution to your individual folder, prepared to present
3	8%	In-class exercise	
	30%		



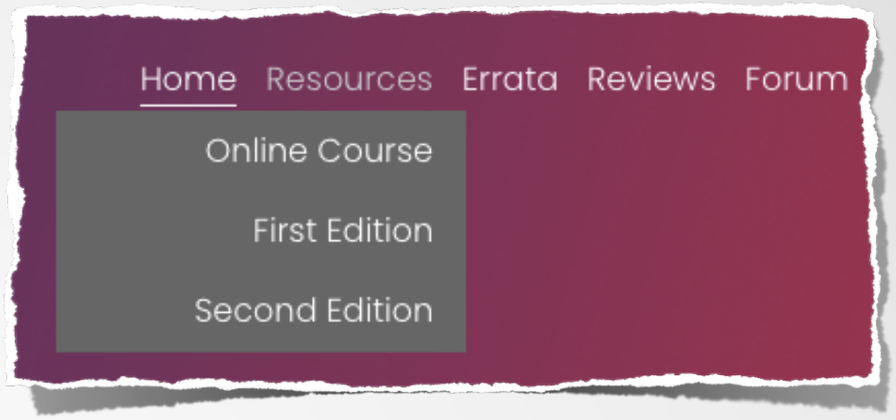
Project topics

- Techniques
  - Machine Learning (supervised and unsupervised learning)
  - LLM
- Topics
  - Credit scoring/credit rating
  - Fraud detection
  - Trading strategies and portfolio management

Index	%	Datails	
1	7%	Slides	For presentation
2	8%	Codes and data	
3	15%	Manuscript	Word limit 2400. Find a target journal. Write in academic style.
	30%		



Introduction to Statistical Learning



https://www.statlearning.com/resources-second-edition

he First Edition topics include:

- Sparse methods for classification and regression
- Decision trees
- Boosting
- Support vector machines
- Clustering

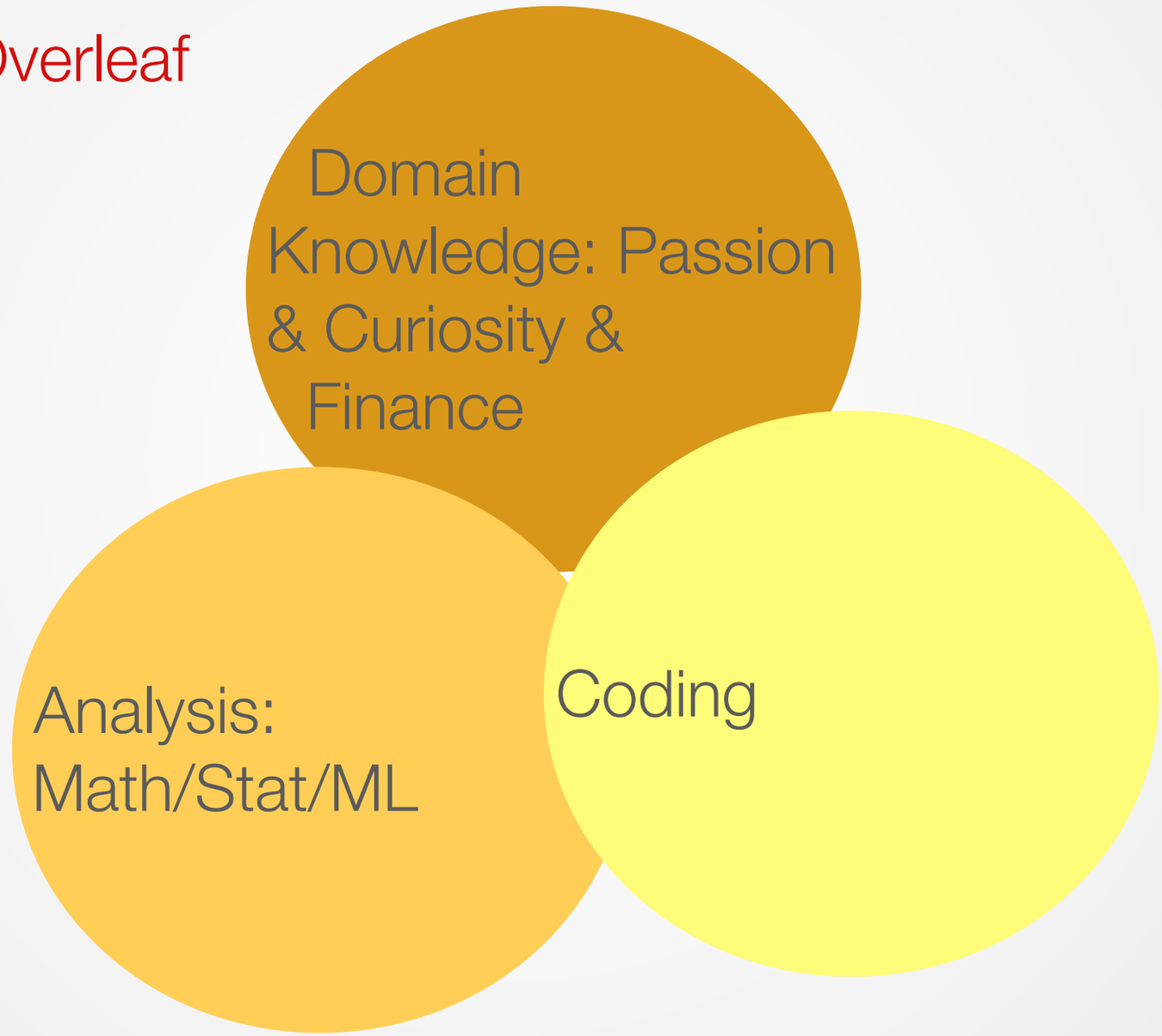
The Second Edition adds:

- Deep learning
- Survival analysis
- Multiple testing
- Naive Bayes and generalized linear models
- Bayesian additive regression trees
- Matrix completion

+ A Note About the Chapter 10 Lab
+ .R Files
+ Rmarkdown Files
+ Jupyter Notebook Files
+ Slides
+ Data Sets
+ Figures

Presentations, presentations, presentations!

- Slides: Using my template
- Manuscript: Overleaf



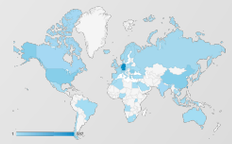
Project

- README.md:
  - title, abstract,
  - links to overleaf (shared with me) and YouTube (emailed your vedios to the TA).
- Slides
- “Code”: Python in Jupyter Notebook
- “Data”: datasets or links to data (in README.md).

Jason will provide an example!

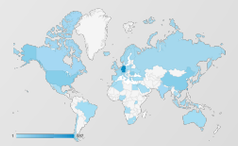
Potentials of your projects

- Thesis or dissertation
- Journal publi



Tools

- Markdown使用說明
  - https://hackmd.io/8nPFj8X7Rc2UhkhfjYAbkw?both
- 哪裡可以找到資料?
  - https://hackmd.io/LfakJmiPQCauy48zAx71xw
- 高速運算: 國網中心
  - https://hackmd.io/HXY75BRpRzimkWdClAbuLw?both



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