

# A recent BAIS graduate student:

“ ...

This is the best taught course of all the ones in MSBA that I have taken. The visualization critiquing and textbook chapter discussions is a brilliant idea. For professional students, this **takes lot of extra time to do** this but it is worth it, it **nudges you to learn more** than what the syllabus was set to do. Also, you get to **learn from other classmates**, in trying to understand their point of view. Finally, ME also posts his own ideas and thoughts to the discussions thus adding more value to these exercises. It also brought the class together. Finally, he is the most organized teacher I have ever come across. He **used ICON to its fullest capabilities**. The **Rubric for homework assignments** is a great checklist to provide to the students - I wish it could be done for all course assignments.

...”



Your instructor

**BS, MS, PhD in Computer Science**

**Senior Scientist / Dept. Head**  
Fraunhofer

**Director & Partnership Leader**  
Humana Inc.

**Chief Innovation Officer**  
ACT, Inc.

**Chief Technology and Innovation Officer**  
QED Group, LLC

**Founder/Principal Consultant,** ibdi Consulting

**Professor of Practice,** U Iowa

Name	Type of Org	Size	Industry	Key responsibilities/ technologies	Duration
Various	Academia	N/A	Basic Research	AI/ML, GUI, <b>Visualization</b>	9 yrs
Fraunhofer, Inc.	Large Non-profit in applied R&D	12,000+	Applied R&D	VR/AR, <b>Data visualization</b> , User Interfaces	10 yrs
Humana Inc.	Fortune 100	40,000+	Healthcare / Insurance	<b>Data analytics</b> , sensors, mobile devices, games	4 yrs
ACT, Inc.	Large Non-Profit	~1300	Educational Services / Standardized Assessment	<b>Data analytics, visualization</b> , AI/ML, mobile devices, games	5.5 yrs
QED Group, LLC	Mid-Size commercial	~150	International Development / Government Services	<b>Data analytics, visualization</b> , AI/ML, sensors, mobile devices	1 yr
IBDI	Sole proprietorship	1	Consulting	<b>Data science, data visualization</b> , AI/ML, IoT	3.5 yrs
University of Iowa	Academia	N/A	Higher Education	<b>Information Visualization</b> , Corporate Innovation	2 yrs.  Adjunct/Part- time: 20+ yrs





# Introduction to the Course

BAIS 6140 – Information Visualization

L. Miguel Encarnaç o

# Agenda

- First day introduction and administrative information
- Intro to the course management system (ICON)
- Overview on Information Visualization

# Instruction

- Instructor

- Prof. Dr. L. Miguel Encarnação

- Email: [miguel-encarnacao@uiowa.edu](mailto:miguel-encarnacao@uiowa.edu) (PREFERRED!)

- Office hours: T/Th 1:30-3:30 PM or by appointment through Zoom

- <https://uiowa.zoom.us/j/91113302546>

- Phone: (319) 321-0075

- Time & Location

- Monday, 6:00 – 9:40 PM

- Online through Zoom: <https://uiowa.zoom.us/j/95681229889>



# General class structure

## In class

- Lecture(s)  
~ 60 min each
- Discussion(s) or Tool intro(s)  
~ 30-60 min each
- Exercise(s)/Practice(s)  
~ 30-60 min each
- Breaks as fit

## Outside of class

- Visualization Critique Posts  
w/ Online commentary  
/discussion
  - Viz critique
- Chapter Readings w/ Online  
commentary/discussion
  - Reflection
- Practical Homework  
Assignments
  - Individual & (possibly) group  
assignments

# Course management structure (ICON)

- Announcements
- Modules
  - Course structure with links to slides, files, assignments
  - Resources
- Assignments
  - Description and Upload
- Discussions
  - Visualization Critique Posts
  - Chapter Discussions
  - Other interesting stuff
- Syllabus
  - table-oriented view of the course schedule
  - basics of course grading
- People
  - Group composition
- Attendance
  - Role calls
- Grades
- Zoom
- UICapture



# Course materials on ICON

- Announcements
  - Through *Announcements* section or Email communication
  - Turn on your notifications !
- Syllabus
  - ~2 lessons per day
  - Order of lessons might change slightly and is updated regularly
    - Check on updates for upcoming classes
    - Times are aspirational and more for ordering components
  - Readings – more in a minute
  - “Visualization Critique” posts – more in a minute
- Bibliography
- Additional resources
- ...

# Course materials on ICON (cont.)

- Assignments (check calendar!)
  - Due according to calendar
  - Visualization Critique post (1-2 point(s))
    - Due end of day before class
    - Interesting Vis from news media
    - Post in corresponding ICON discussion assignment
    - MUST comment of peer's post (otherwise 50% point reduction)
    - Might be discussed in class
    - Later in the semester (starting post 5) additional point if related to learned content
  - Chapter readings (2 points)
    - Due end of day before class
    - Enter (and graded) within discussion
    - Enter 1 brief question/realization/response per chapter/article (2 pts.)
    - MUST comment of peer's post (otherwise 50% point reduction)
    - Discussed only online
    - Sometimes long or multiple short chapters: Start early and spread it out!

# Course materials on ICON (cont.)

- (Practical) Homework Assignments
  - Upload to ICON
  - Different levels of effort (i.e. Points)
  - Uploads
    - Always add user name and date to your file name
    - If system doesn't work: Send as zip-archive by email (exception!)
      - That's to communicate certain issues to me
  - Tableau workbooks
    - Share on Tableau Public (link in written documentation)
    - Need to create Tableau Public account
    - Upload as packaged workbook (export as such)
  - More detail information in Module *Assignments* & Announcements

# Grading Policy (see also syllabus)

- Components
  - Participation 5%
    - Sign-in sheet (!)
    - Regularly providing/submitting data /visualizations for class
  - Reading assignments & discussions 15%
  - Visualization Critique posts 10%
  - Practical HW/Lab assignments 50%
  - Final Exam Quiz 20%
- 25% penalty for late submissions
  - Per day late
  - No grace period for discussions (i.e. Reading assignments/Reviews) or visualization critique posts !
- Final grading
  - Final quiz curved
  - Final grade curved if necessary
- Details continuously adapted/finalized
  - Communicated early
  - ICON is a system – don't be obsessed about online grades!

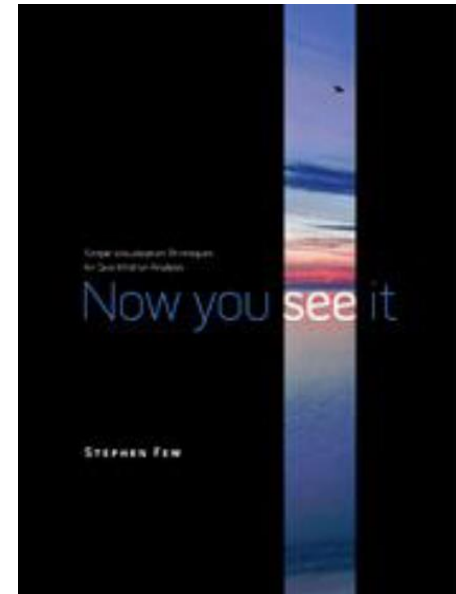


# Assignments

- Class participation (4)
  - Deliverable: Data/viz file submissions
- Visualization critique posts (9)
  - Purpose: Reflection and Real-world application
  - Deliverable: 1 “tweet-length” ICON post with critique on recent news visualization; “Liking” and/or commenting
- Chapter Readings (13)
  - Purpose: Preparation & deepening of lectures
  - Deliverables:
    - Input to Discussions on ICON
    - “Liking”
- (Practical) Homework Assignments (5)
  - Purpose: Hands-on skills development
  - Deliverables:
    - Uploading required docs to ICON (w/ .twbx packaged workbook extract)
    - Presenting & demonstrating during class
- Final exam (1)
  - Online quiz in ICON on last day of class
  - Covering class materials, readings & visualization critique posts

# Course materials (cont.)

- Book
  - S. Few: *Now you see it*



# Course materials

- Main Software

- Tableau

- <http://www.tableau.com>

- Installation

- See related Announcement on ICON for student installations

- Learning Tableau

- Short introduction
    - Students familiarize themselves with Tableau over the first two (2) weeks
    - Online videos on Tableau website

- Help

- Online community on Tableau website

# Course materials (cont.)

- Other Software

- MS Excel

- Simple data shaping, visualization and analysis
    - Tableau add-in

- Voyant Tools

- Visualization for text and document analysis
    - Web-based and Free
    - <https://voyant-tools.org/>
    - Documentation: <http://docs.voyant-tools.org/>



# Housekeeping

- ICON
  - Communicate problems early and often to [miguel-encarnacao@uiowa.edu](mailto:miguel-encarnacao@uiowa.edu)
  - Multiple attempts to complete assignments
    - To circumvent ICON “features” (Canvas LMS )
    - To allow for consideration of instructor communication
    - No iterative improvement process!
    - Grading of last attempt
    - No more attempts accepted once graded
  - Syllabus updated
    - Continuous work in progress
    - Check regularly
  - Discussions
    - Grading of reading assignments see related ICON Announcement item
    - Peer-to-peer instructional experience

# Housekeeping

- Homework Assignments
  - Discussion groups set up to ask questions for everybody to see
  - Questions by email to [miguel-encarnacao@uiowa.edu](mailto:miguel-encarnacao@uiowa.edu) ONLY if of more personal nature
- Reading Assignments
  - Easy way to lose important points!
  - Some are preparation of next class, some are deepening of previous one
    - ICON assignments' dates count
    - First attempt counts
      - No improving of question after grading
      - However: Don't copy questions!
- Group Assignments
  - Planning and coordination are key
  - Support others based on your strength, learn from others based on your weaknesses, be a team player
  - Make sure you use the same software versions (for data exchange)