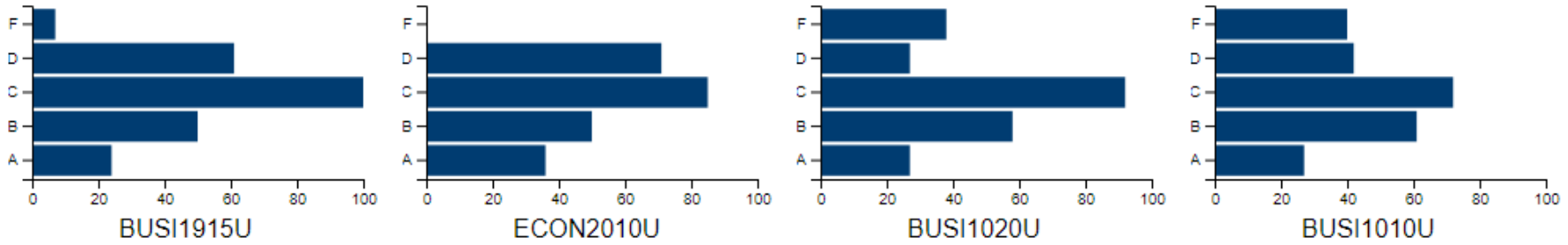
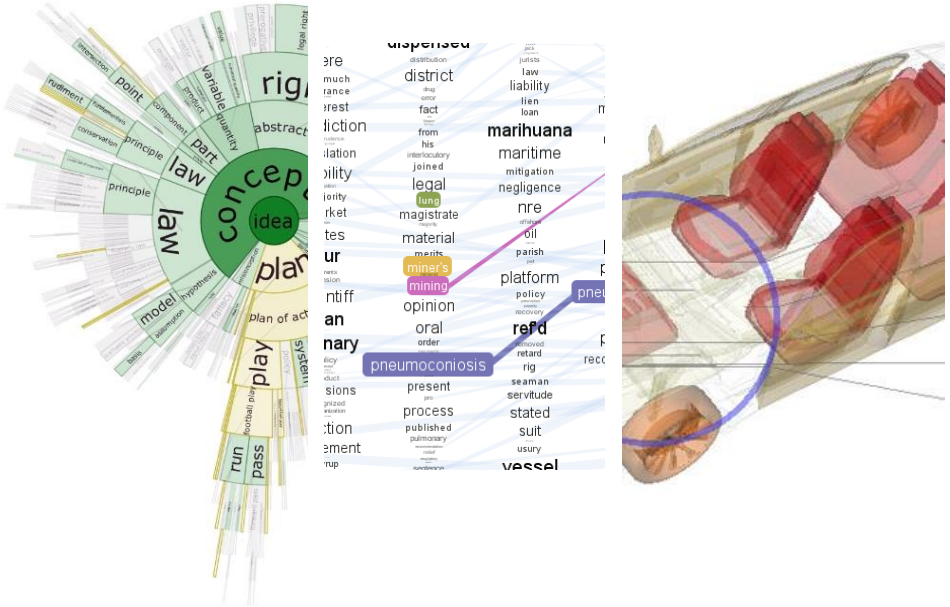


Supporting Student Success with Visual Analytics

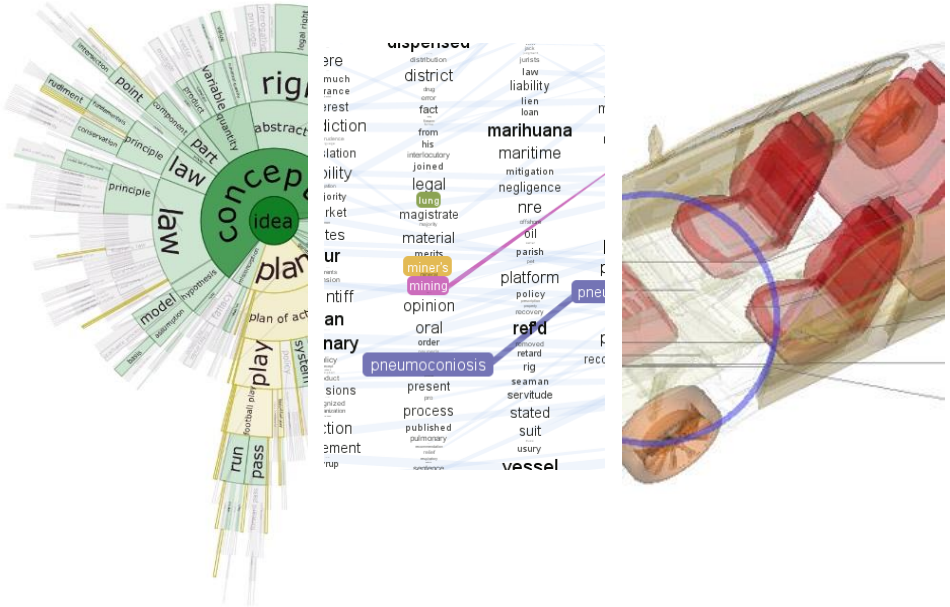
Christopher Collins
Canada Research Chair and Associate Professor
Ontario Tech University

OntarioTech UNIVERSITY

vialab
visualization for information analysis

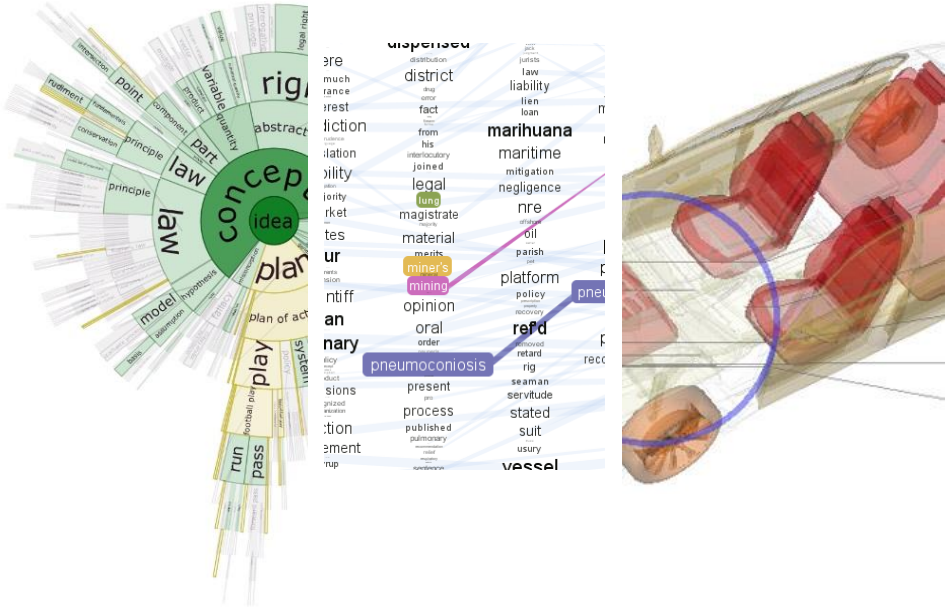


Information Visualization, Analytics, and Graphical Perception



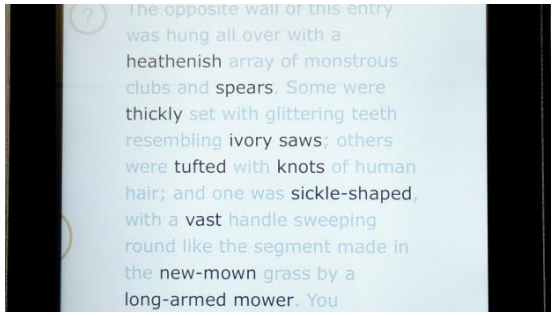
Information Visualization, Analytics, and Graphical Perception

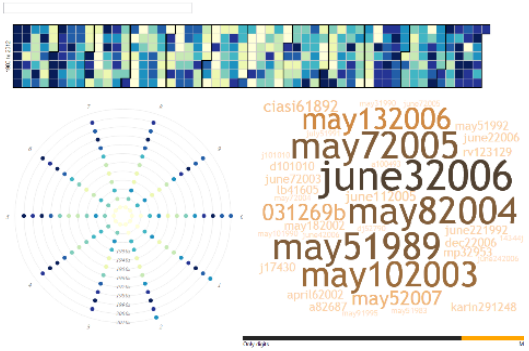
Interaction Design

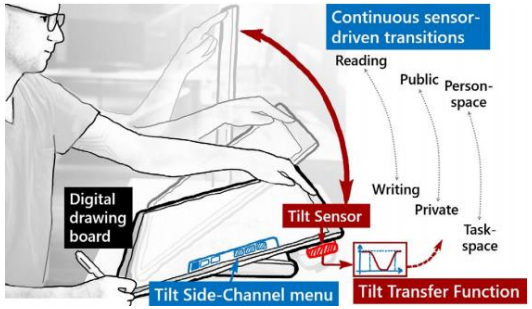


Information Visualization, Analytics, and Graphical Perception

Interaction Design

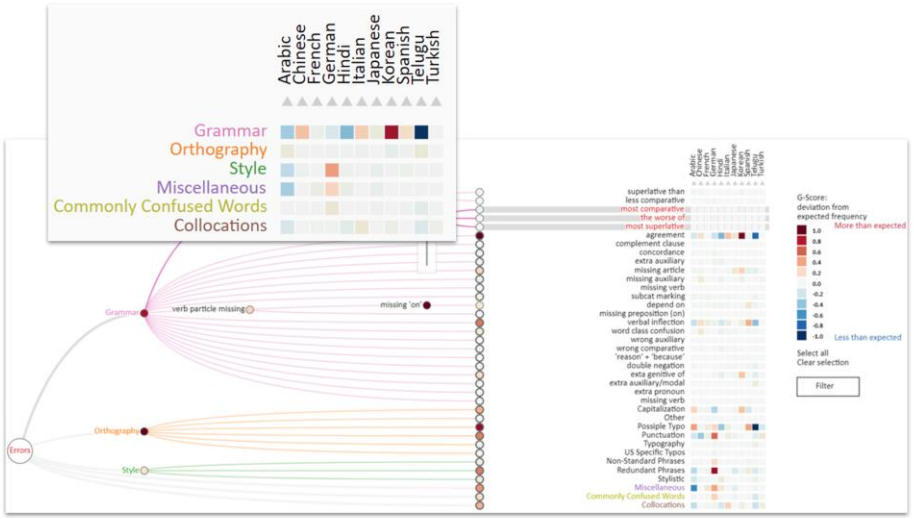




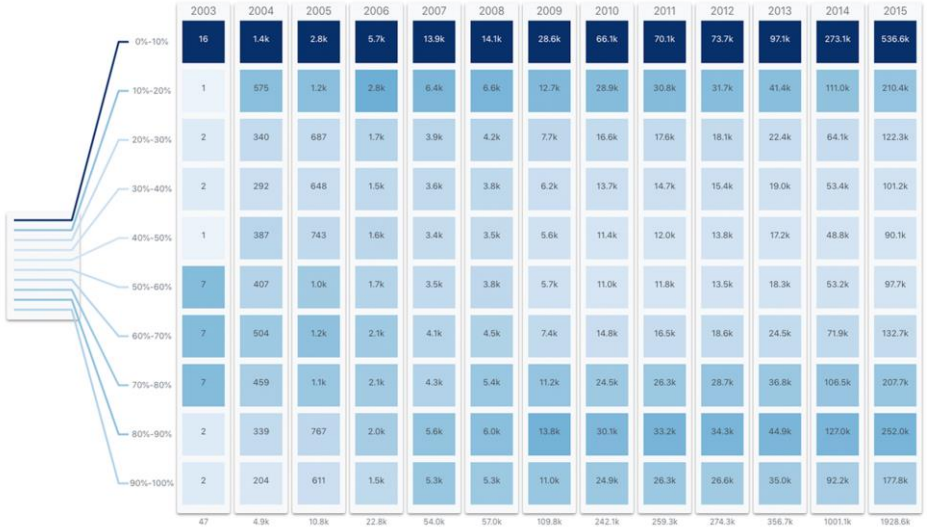


Areas of application: education, software, productivity, security, humanities, healthcare

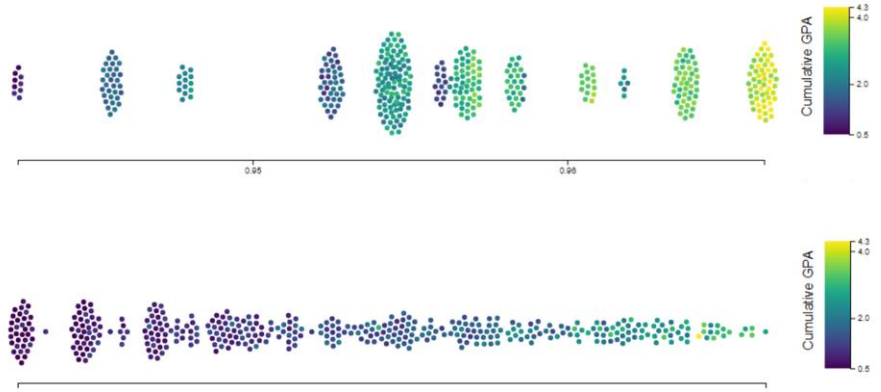
Document Annotation Tools



Apps for Language Learning

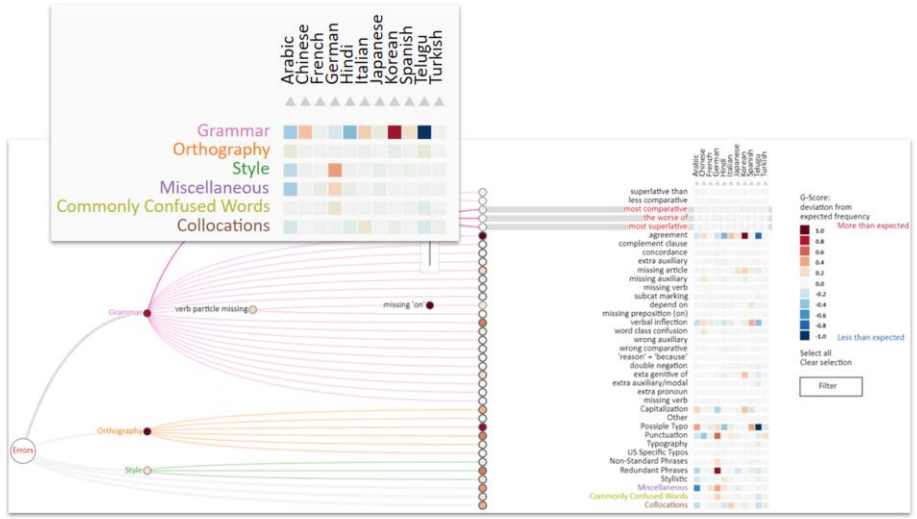


Large-scale Text Analytics

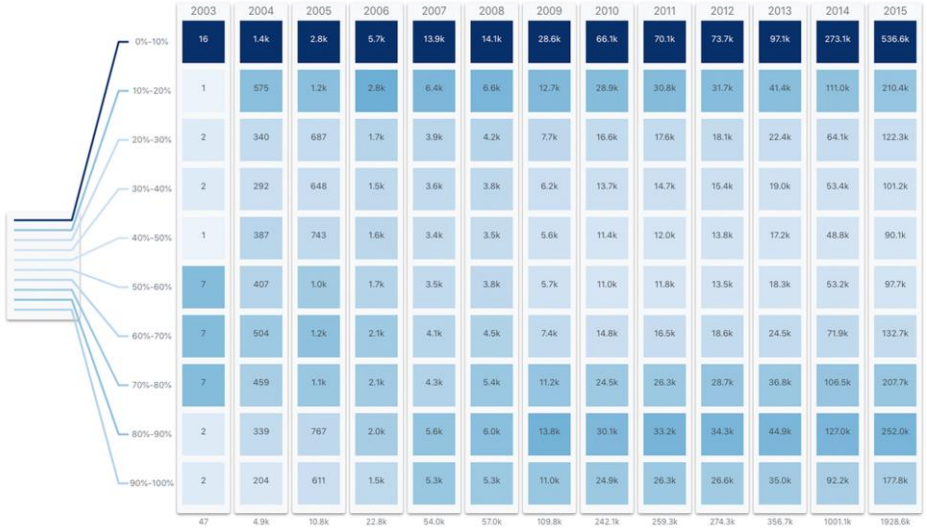


Explainable Machine Learning

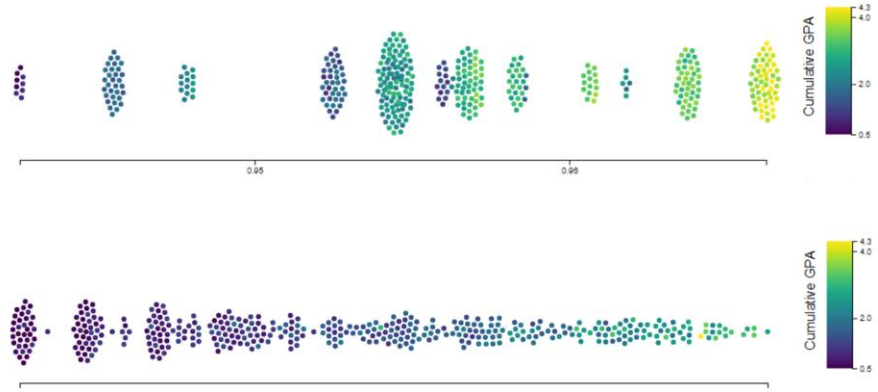
Document Annotation Tools



Apps for Language Learning



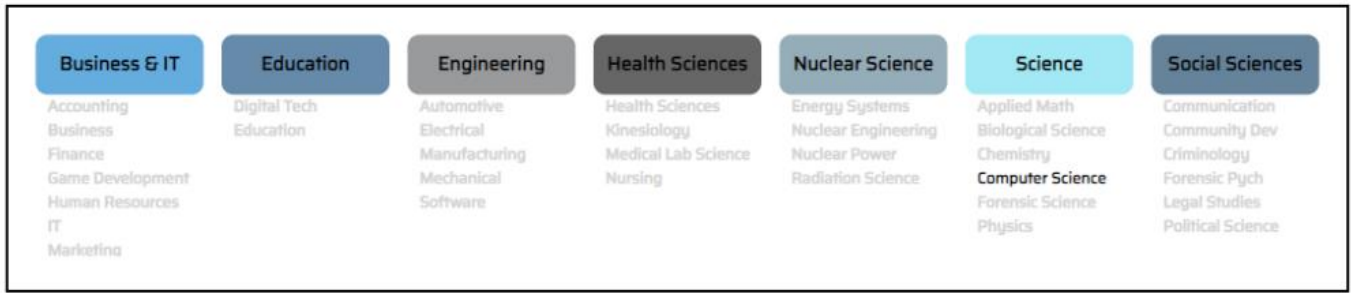
Large-scale Text Analytics

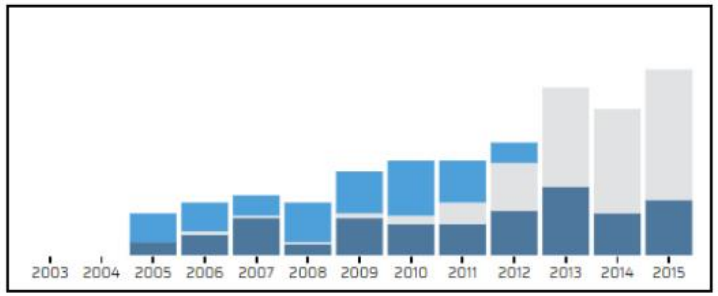


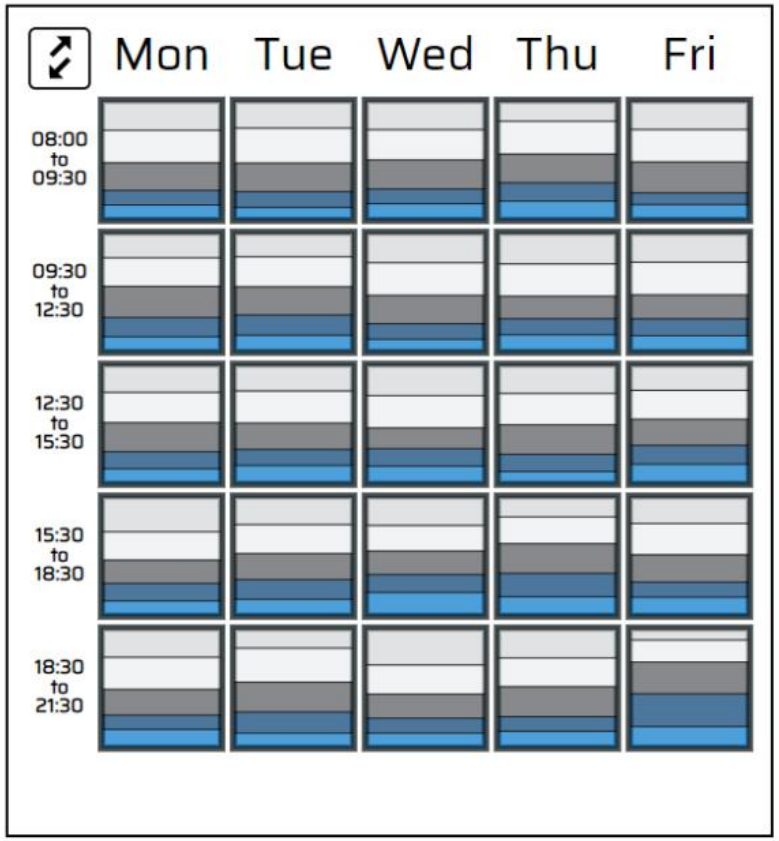
Explainable Machine Learning

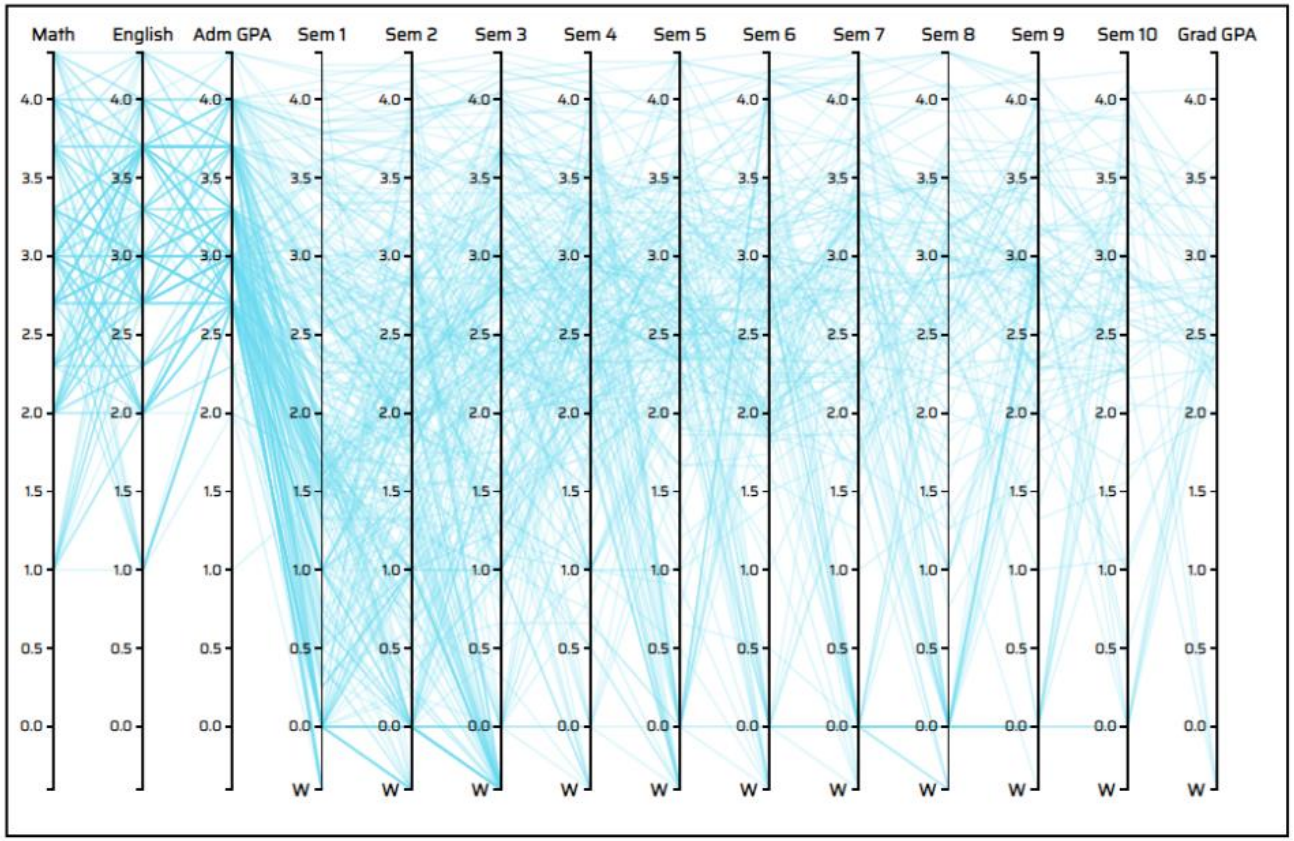
Riley Weagant, Taylor Smith, Michael Lombardo

CASE STUDY:
DASHBOARD FOR INSTITUTIONAL ANALYTICS

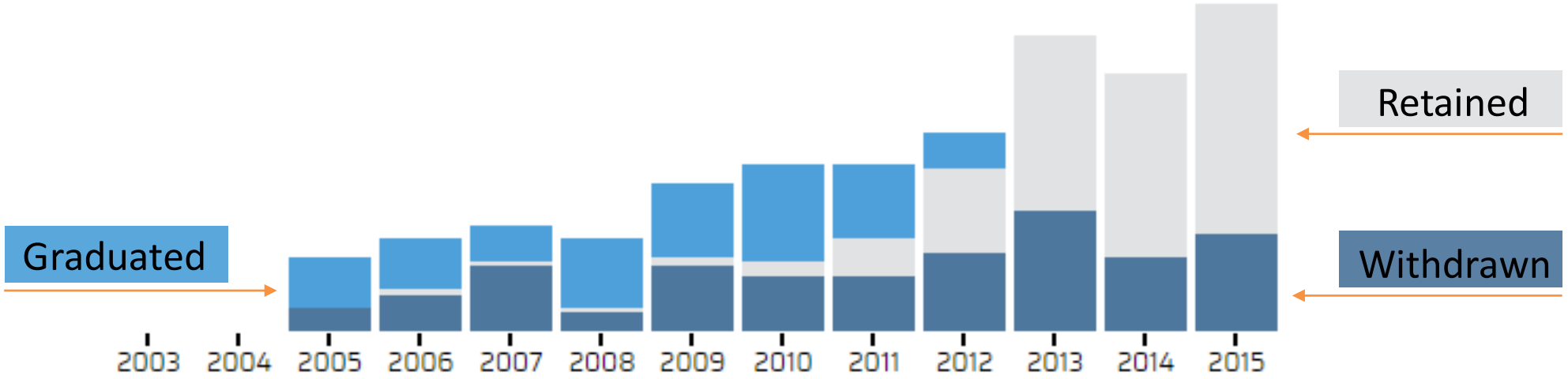

Business & IT
Accounting
Business
Finance
Game Development
Human Resources
IT
Marketing
Education
Digital Tech
Education
Engineering
Automotive
Electrical
Manufacturing
Mechanical
Software
Health Sciences
Health Sciences
Kinesiology
Medical Lab Science
Nursing
Nuclear Science
Energy Systems
Nuclear Engineering
Nuclear Power
Radiation Science
Science
Applied Math
Biological Science
Chemistry
Computer Science
Forensic Science
Physics
Social Sciences
Communication
Community Dev
Criminology
Forensic Pych
Legal Studies
Political Science

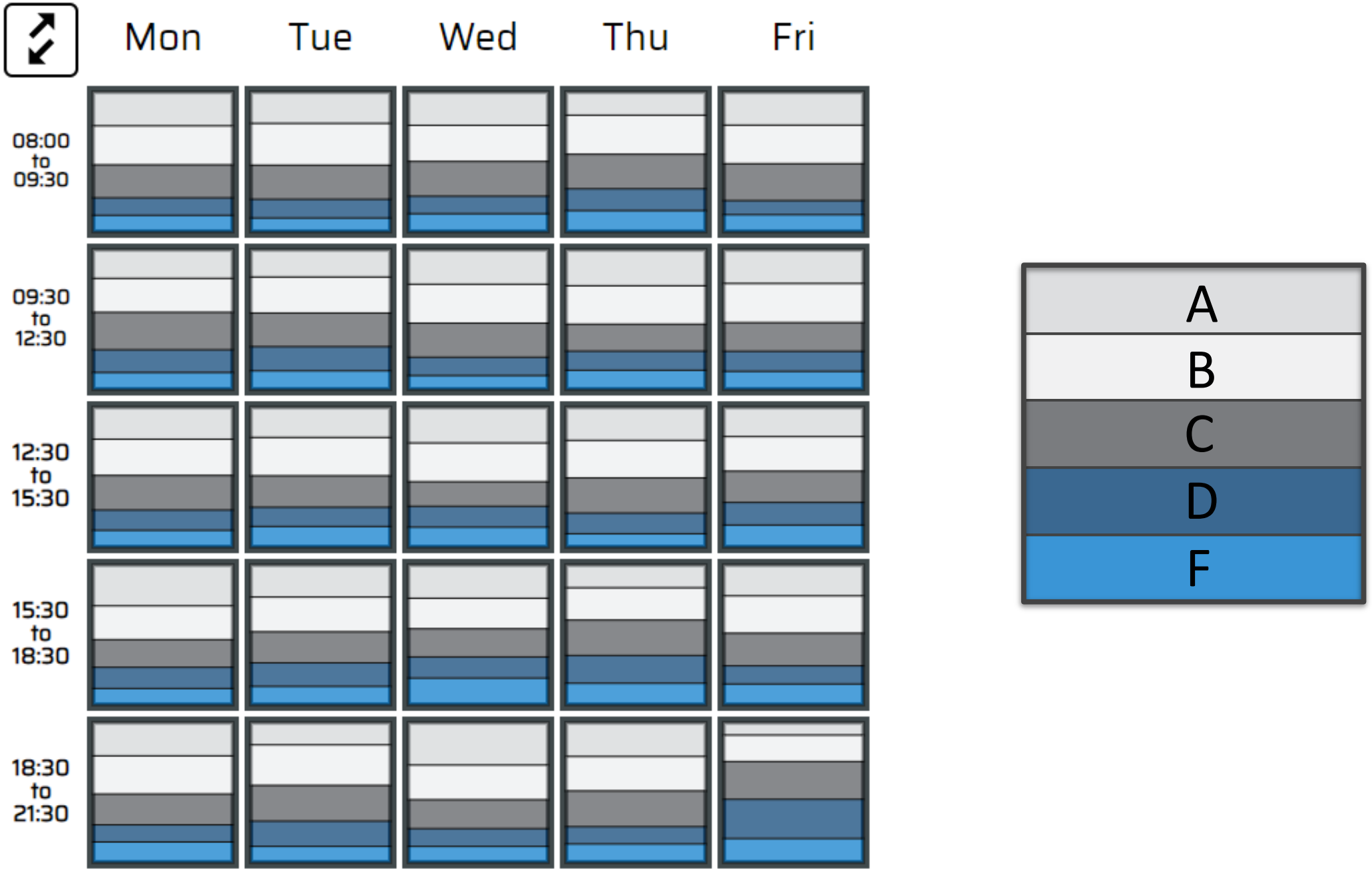

2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

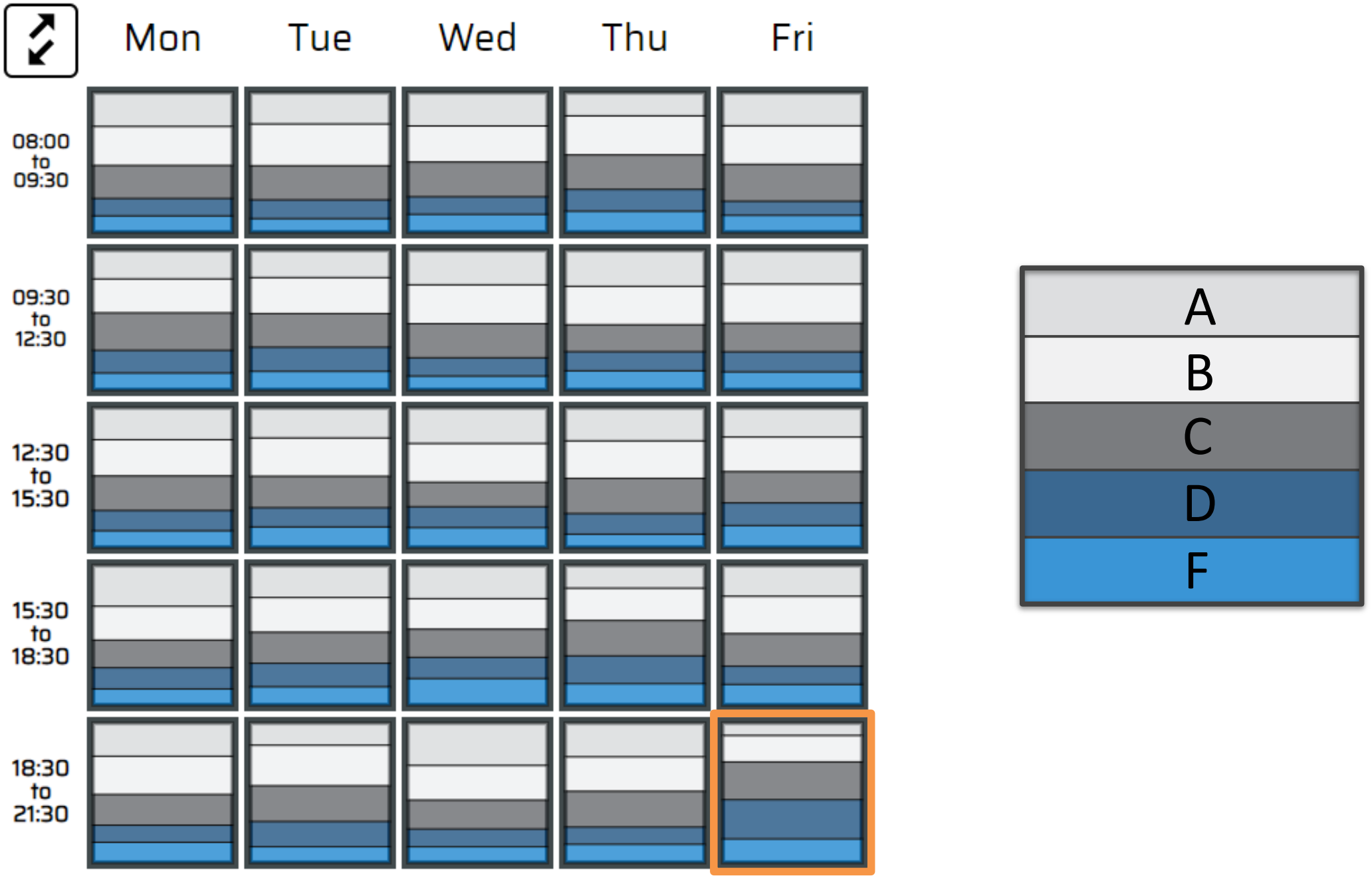

Mon
Tue
Wed
Thu
Fri
08:00 to 09:30
09:30 to 12:30
12:30 to 15:30
15:30 to 18:30
18:30 to 21:30

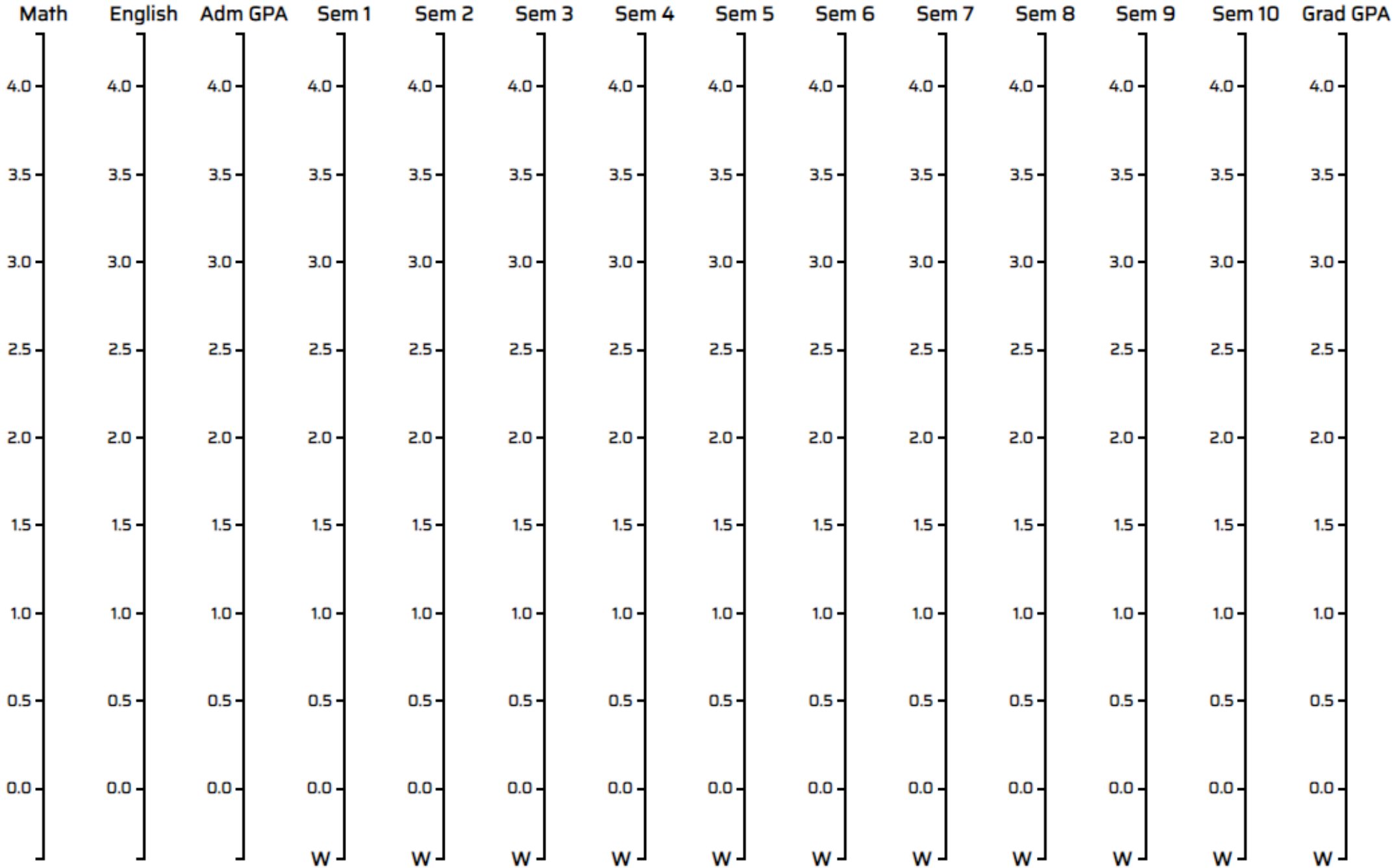

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

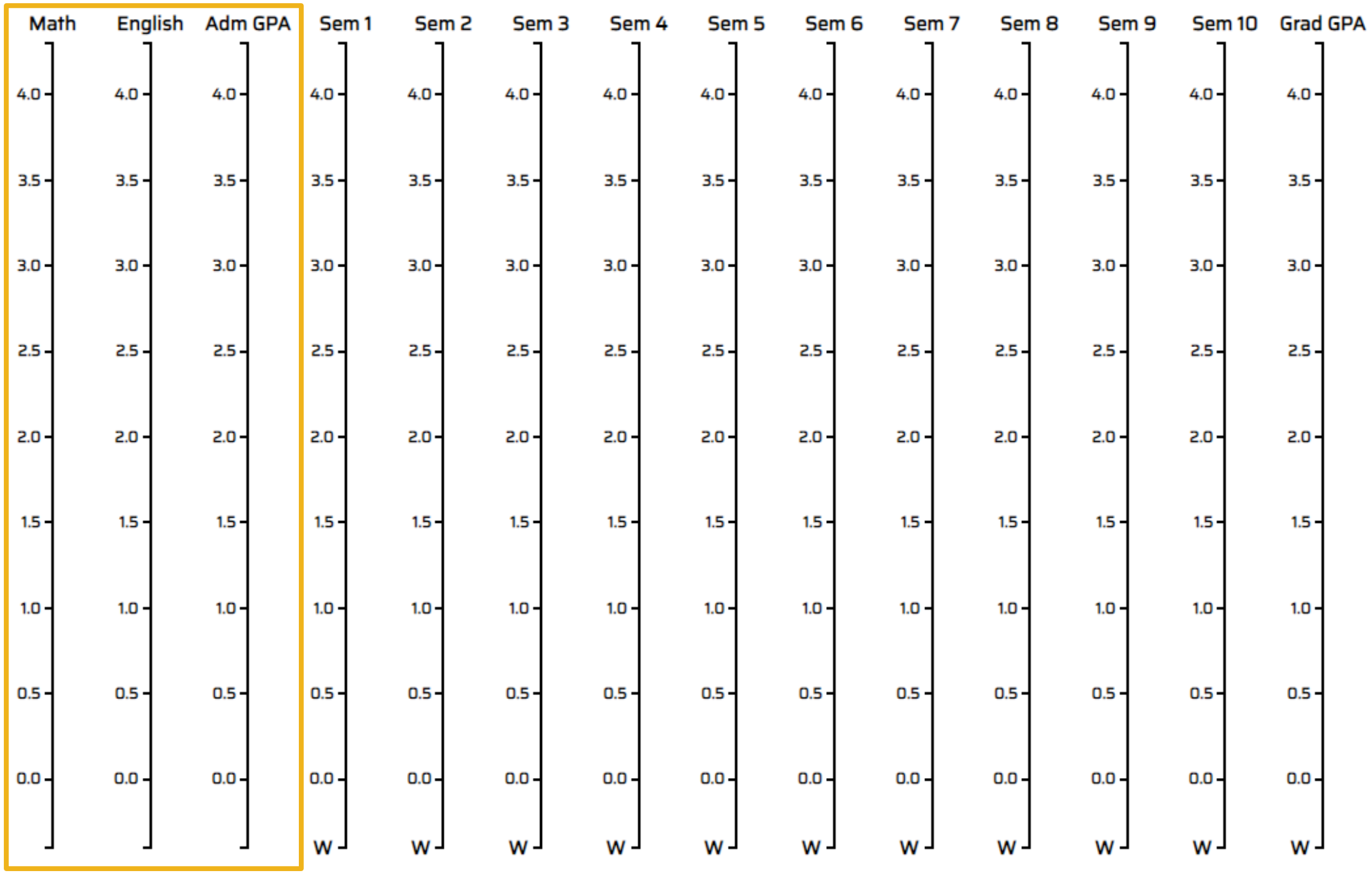
Business & IT	Education	Engineering	Health Sciences	Nuclear Science	Science	Social Sciences
Accounting	Digital Tech	Automotive	Health Sciences	Energy Systems	Applied Math	Communication
Business	Education	Electrical	Kinesiology	Nuclear Engineering	Biological Science	Community Dev
Finance		Manufacturing	Medical Lab Science	Nuclear Power	Chemistry	Criminology
Game Development		Mechanical	Nursing	Radiation Science	Computer Science	Forensic Pych
Human Resources		Software			Forensic Science	Legal Studies
IT					Physics	Political Science
Marketing						

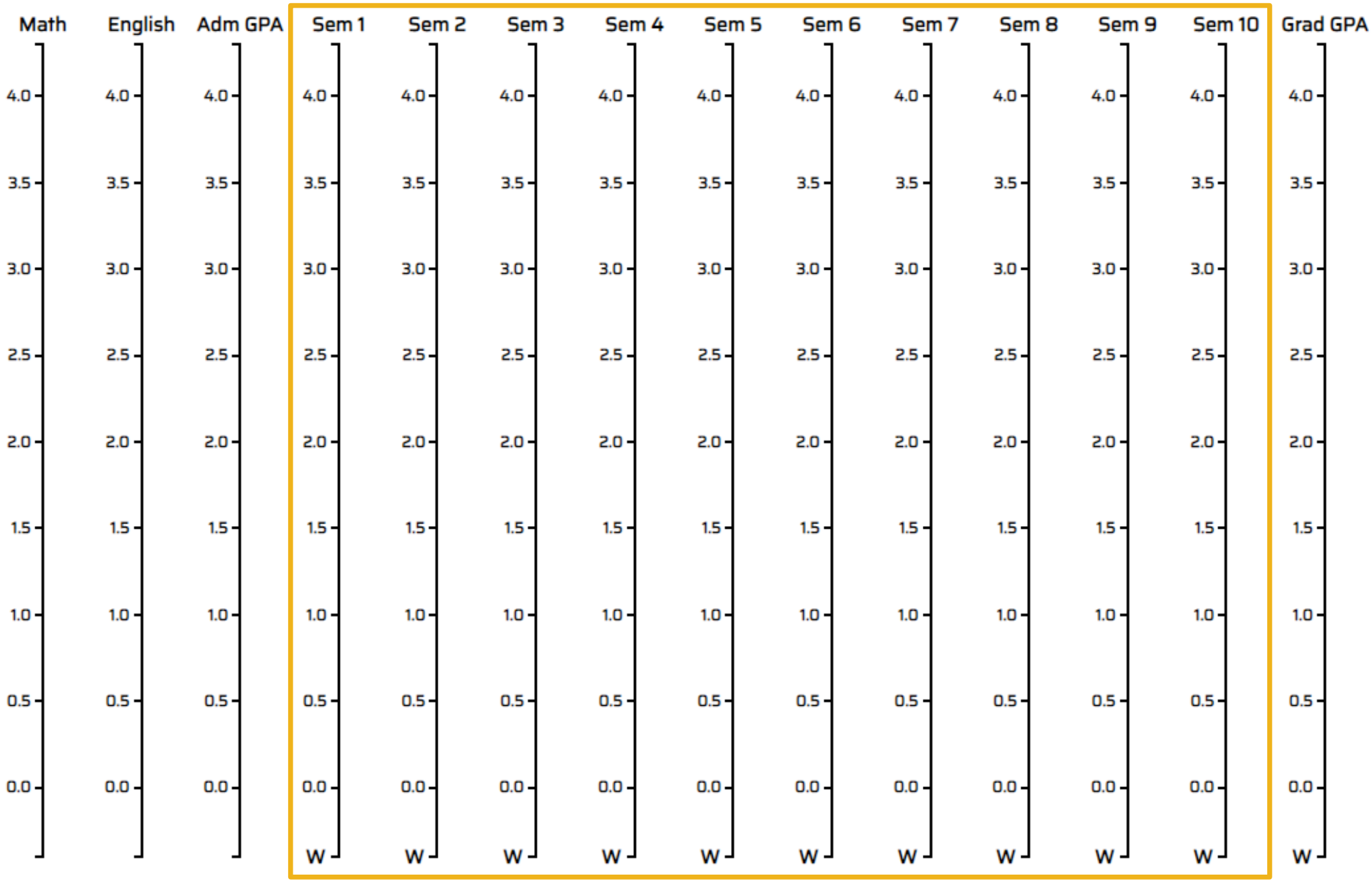

Graduated
Retained
Withdrawn
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

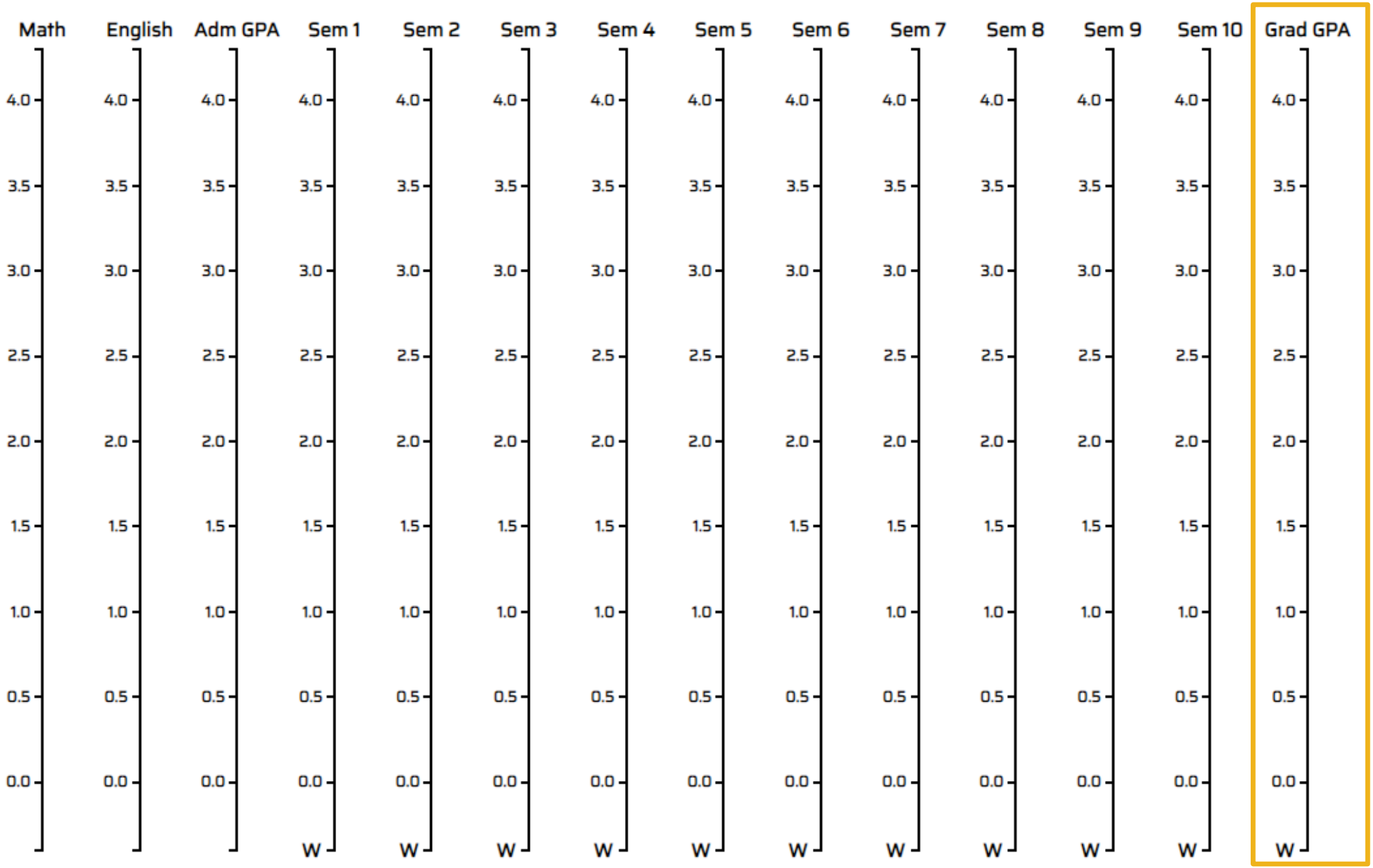

Mon
Tue
Wed
Thu
Fri
08:00 to 09:30
09:30 to 12:30
12:30 to 15:30
15:30 to 18:30
18:30 to 21:30
A
B
C
D
F

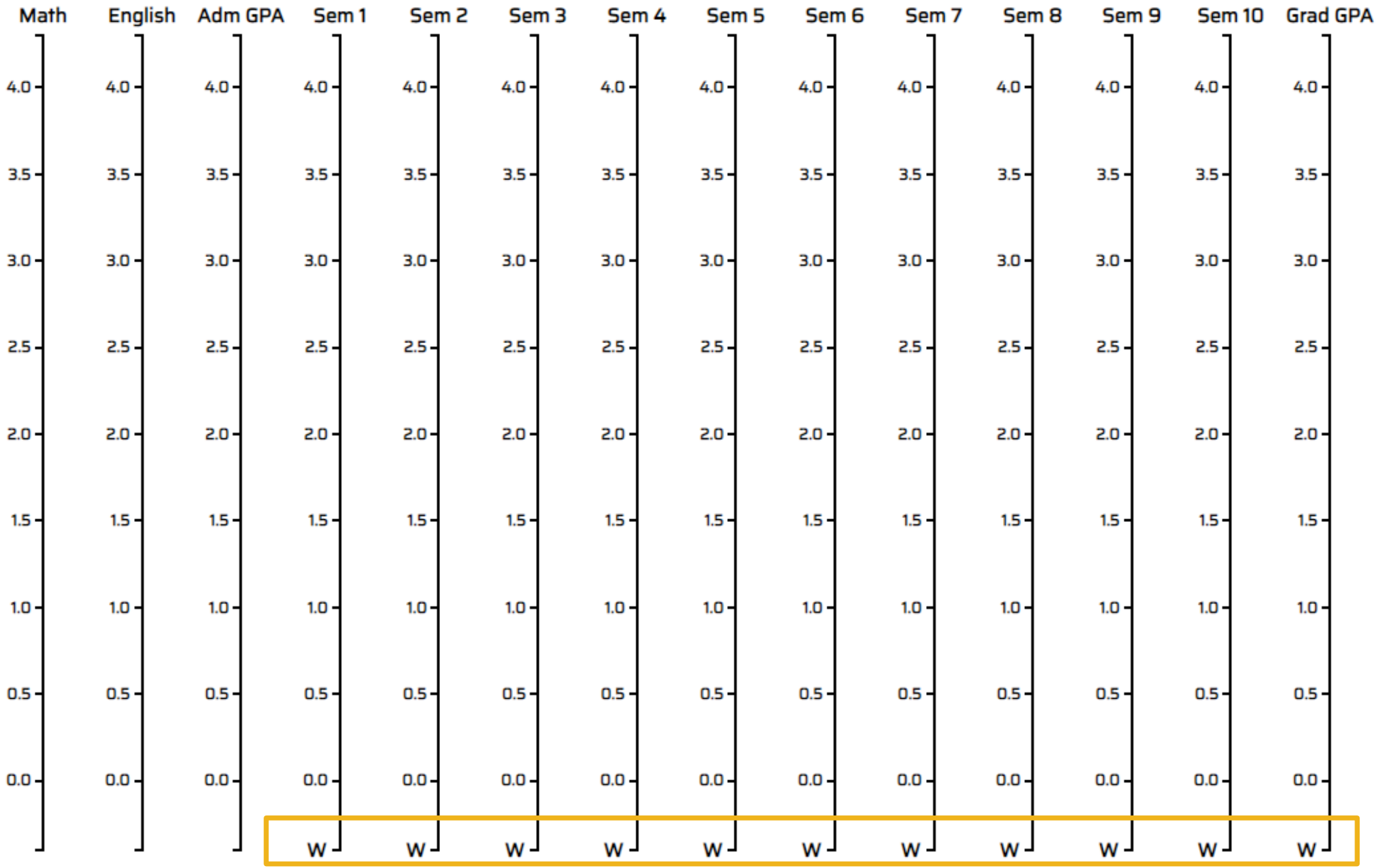

Mon
Tue
Wed
Thu
Fri
08:00 to 09:30
09:30 to 12:30
12:30 to 15:30
15:30 to 18:30
18:30 to 21:30
A
B
C
D
F

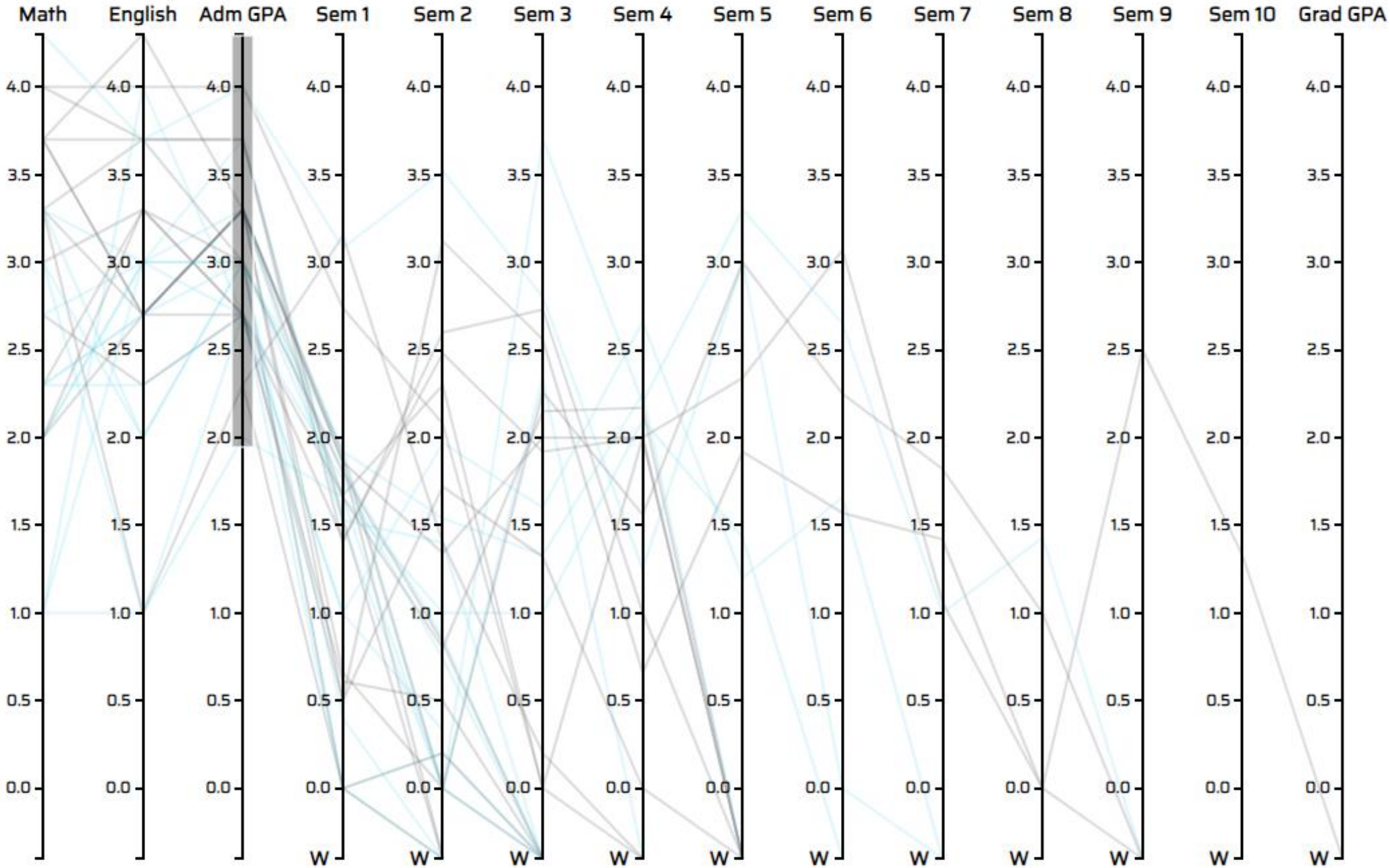

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

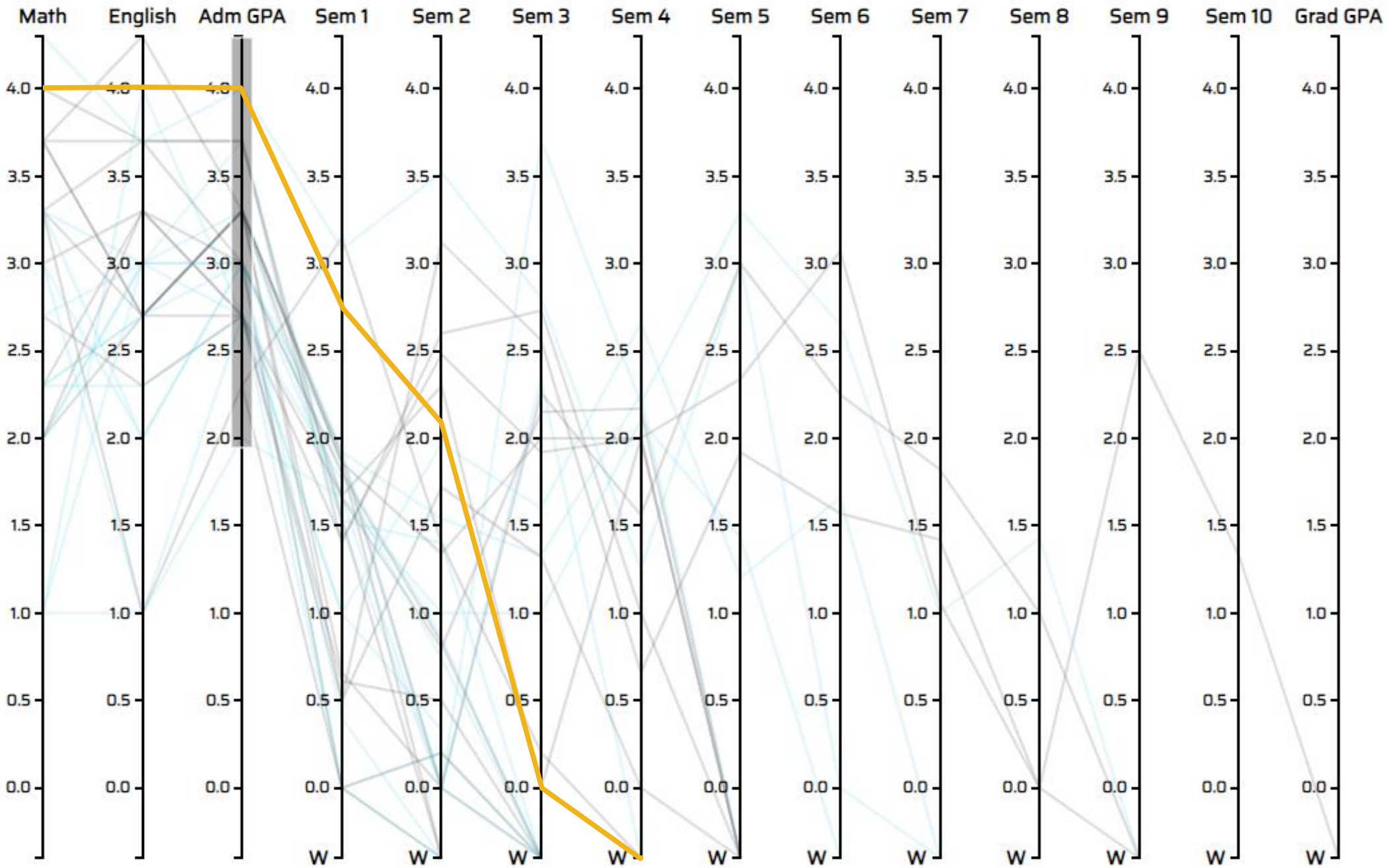

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

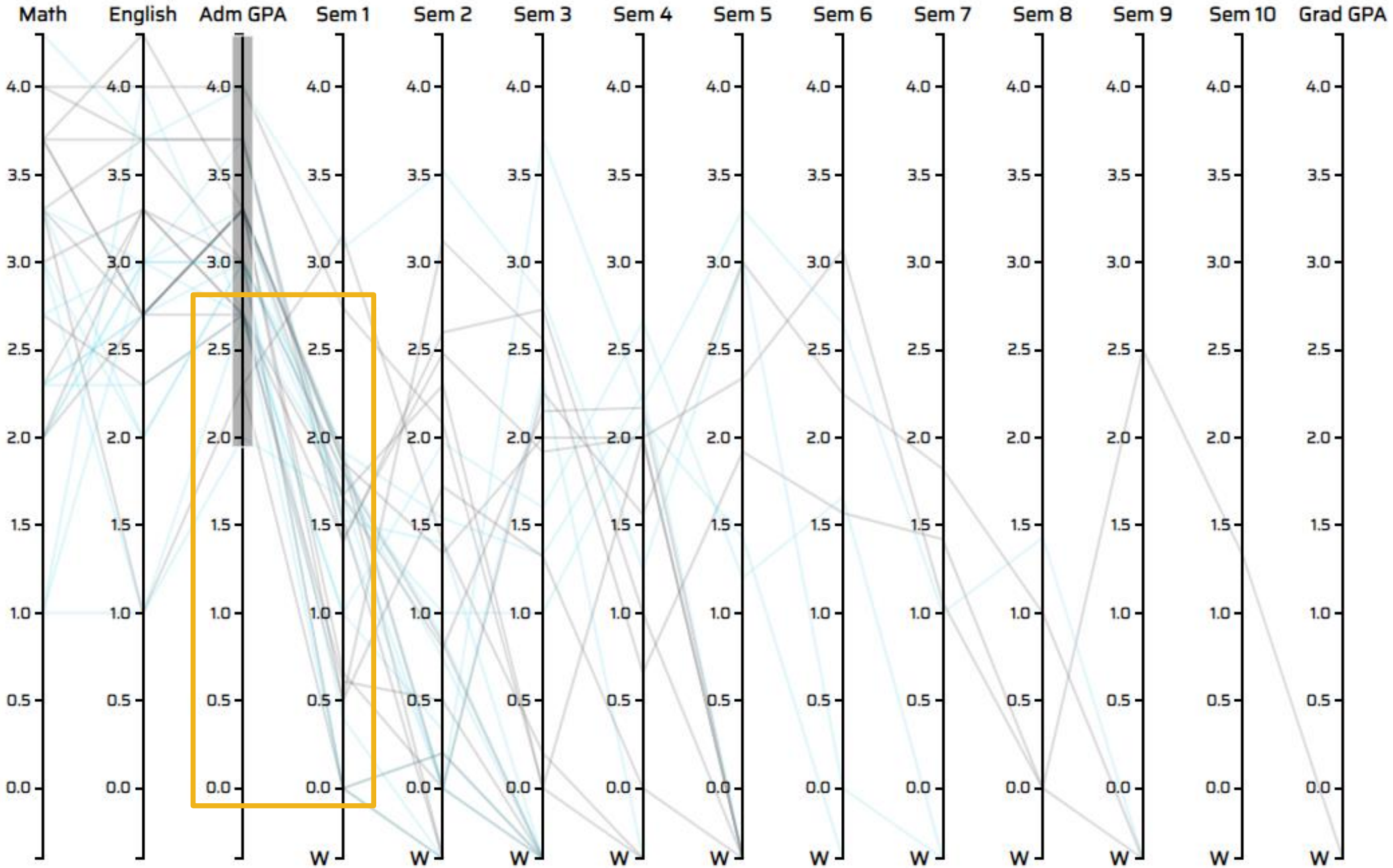

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

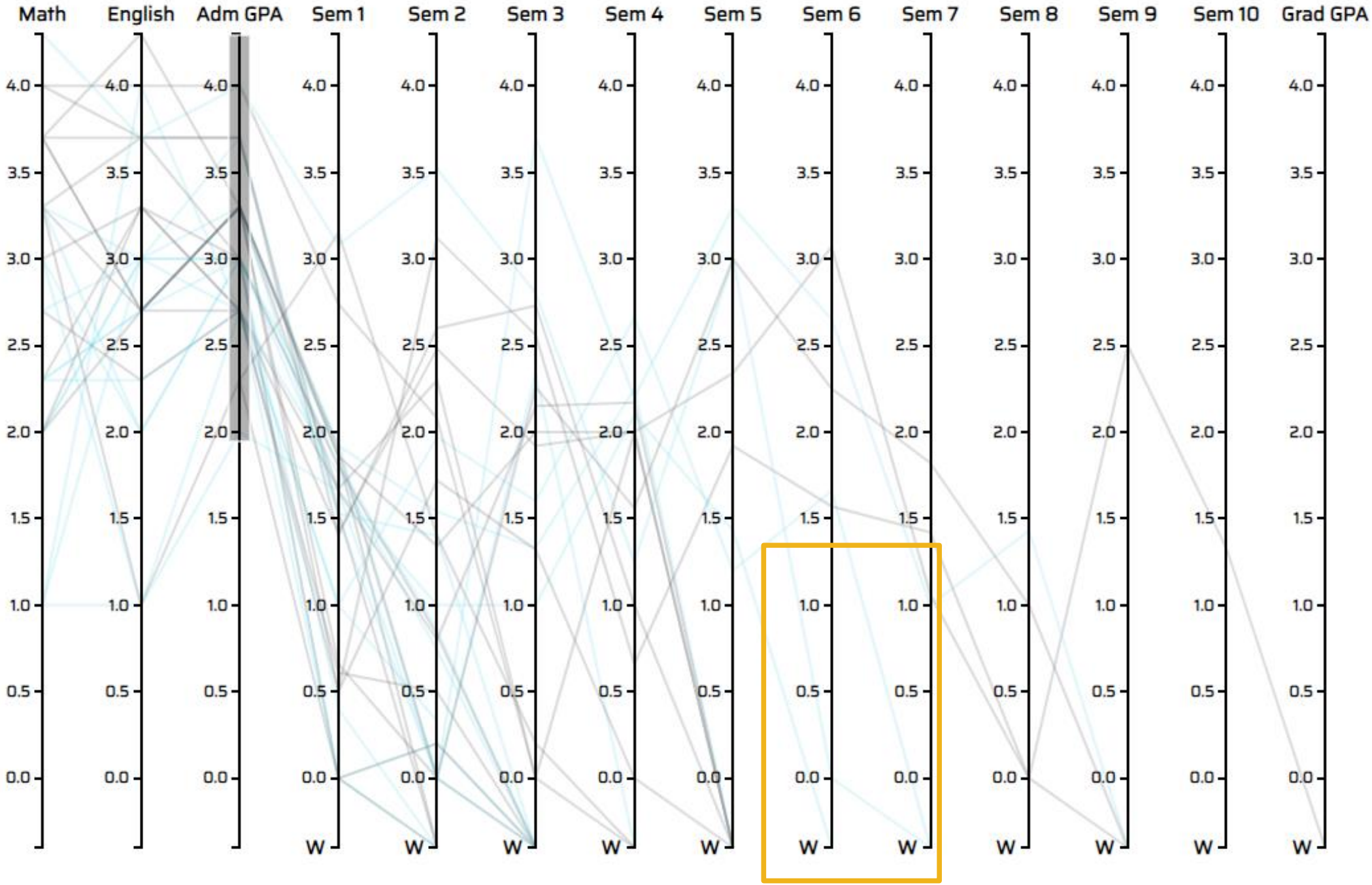

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

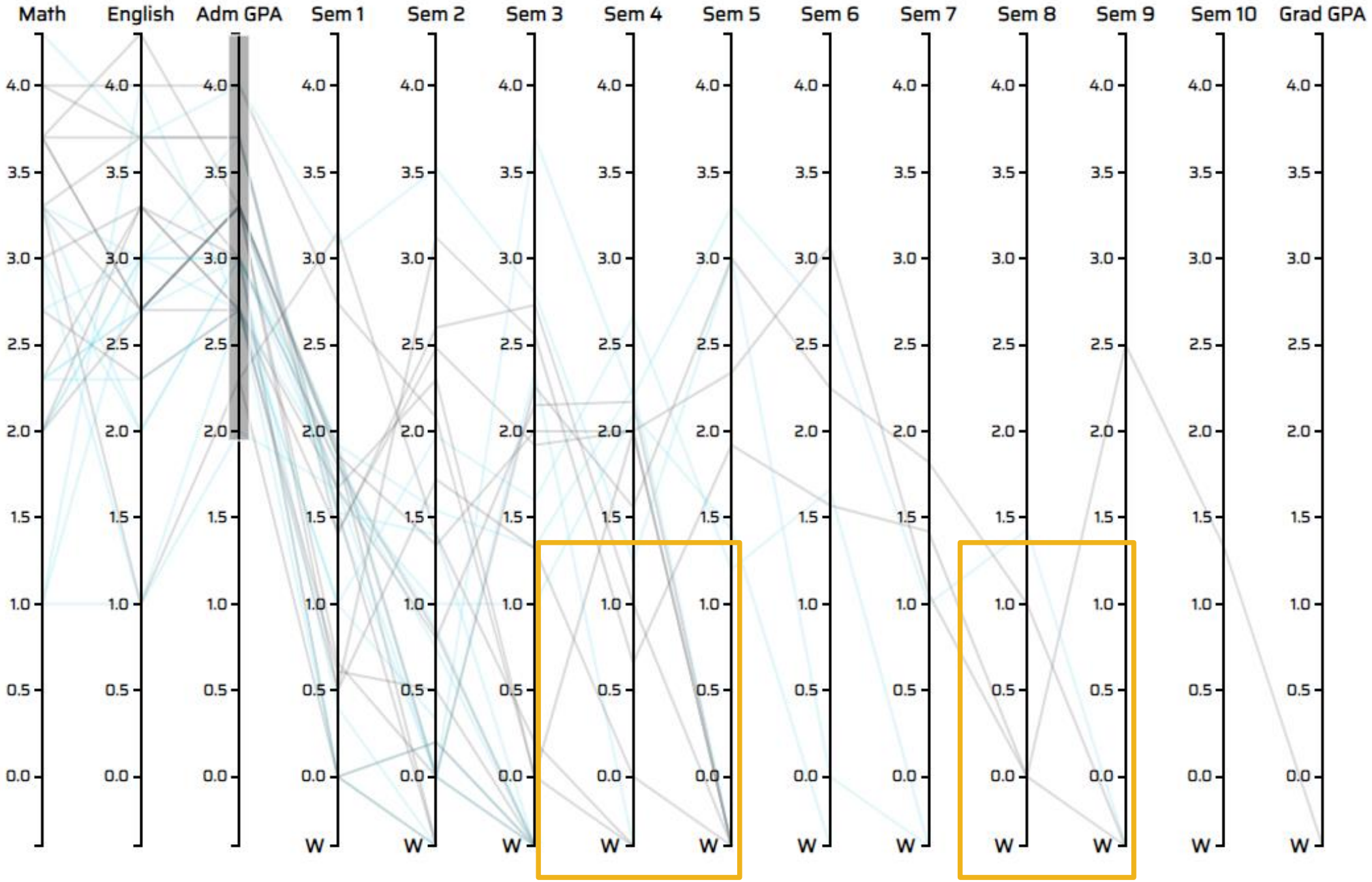

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W


Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W


Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W


Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

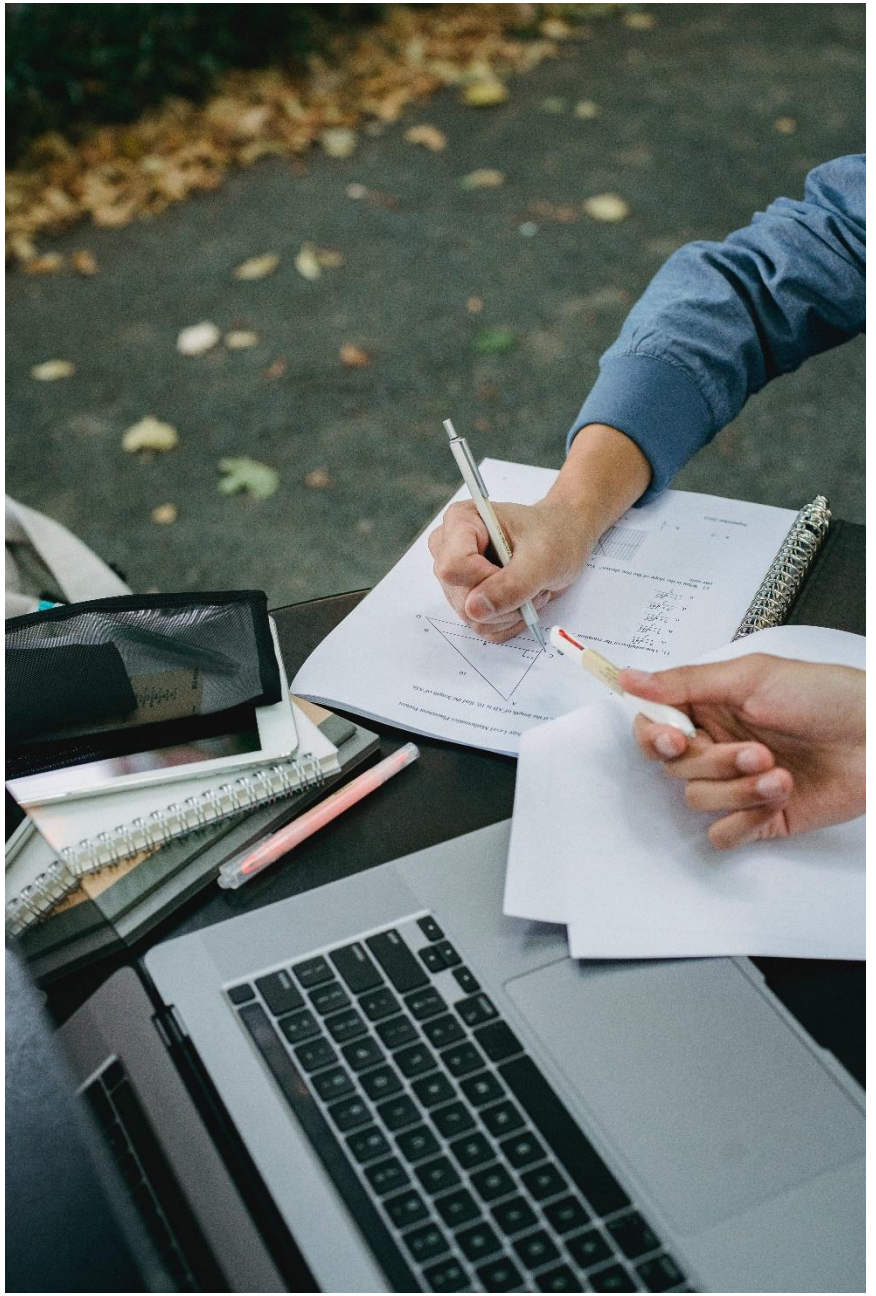

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W


Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

I’m struggling…

What courses should I take?

What should I focus on?

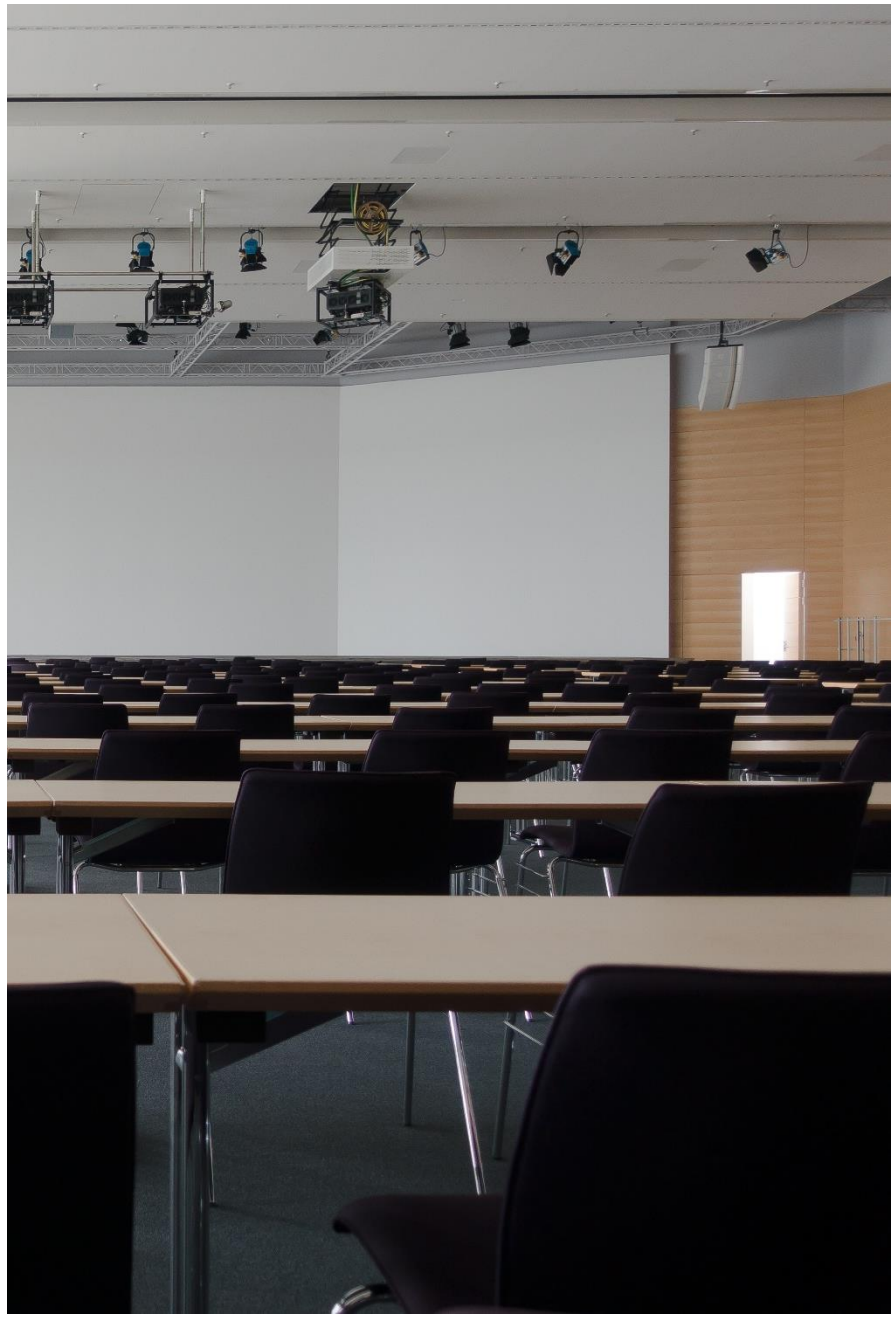


Some students are leaving…

Can data-driven advice help?

We need to reduce revenue loss.

How to improve outcomes and reputation?



Riley Weagant

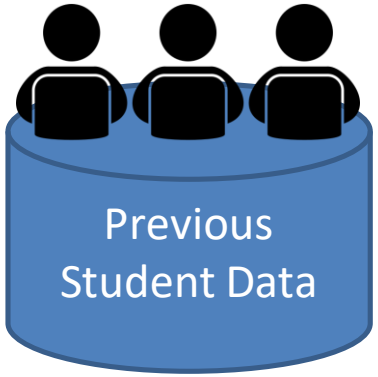
CASE STUDY:
SUPPORTING RETENTION WITH MACHINE LEARNING

Data

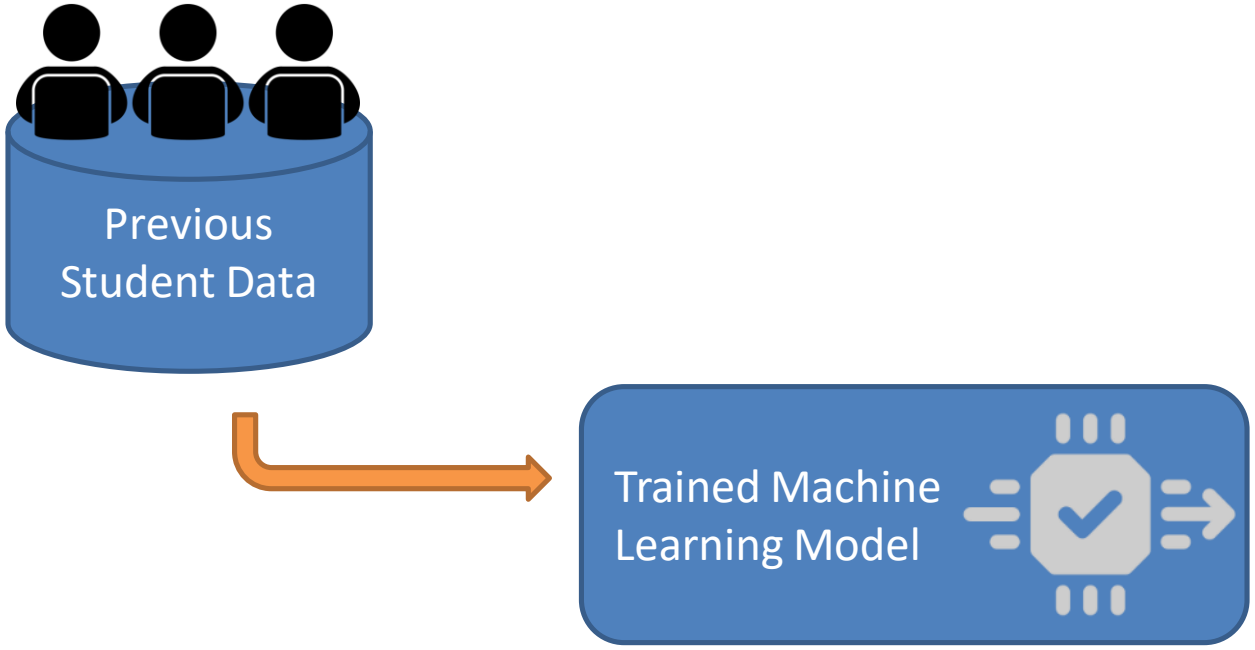
- All course outcomes, all students (anonymized)
- Admission GPA
- Retention status

Demographic Information				Course Information				
id	**year**	**...**	**adm_gpa**	**ACHL0100T**	**ACHL0201T**	**...**	**WMST1000T**	**WRIT1001T**
1	2010	...	2.3	C	0	...	0	A-
2	2005	...	3.3	0	0	...	0	0
3	2007	...	3.0	D	C	...	0	0
4	2011	...	4.3	0	0	...	A	B-
5	2008	...	3.7	0	A+	...	0	0

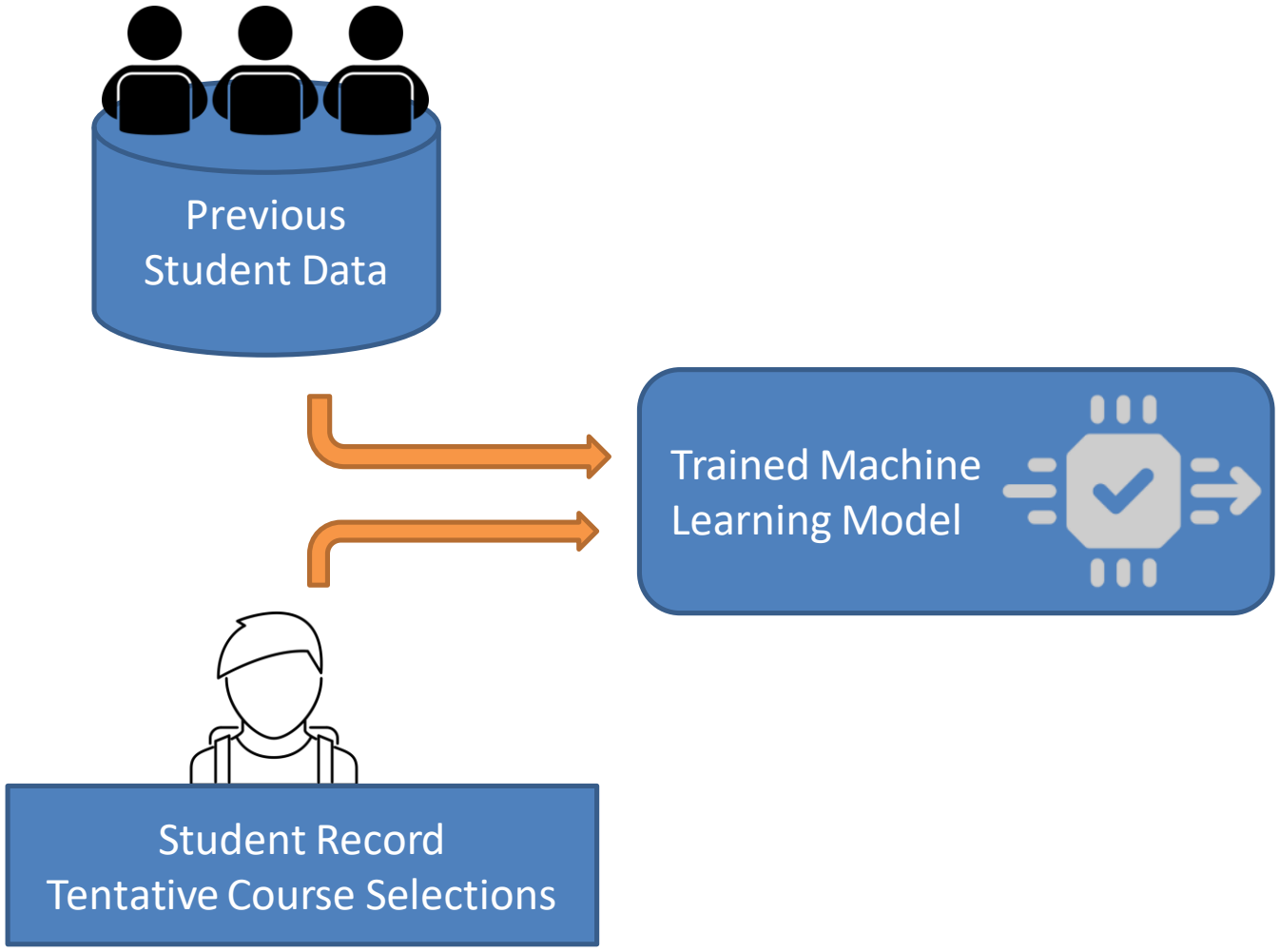
Predictive Model



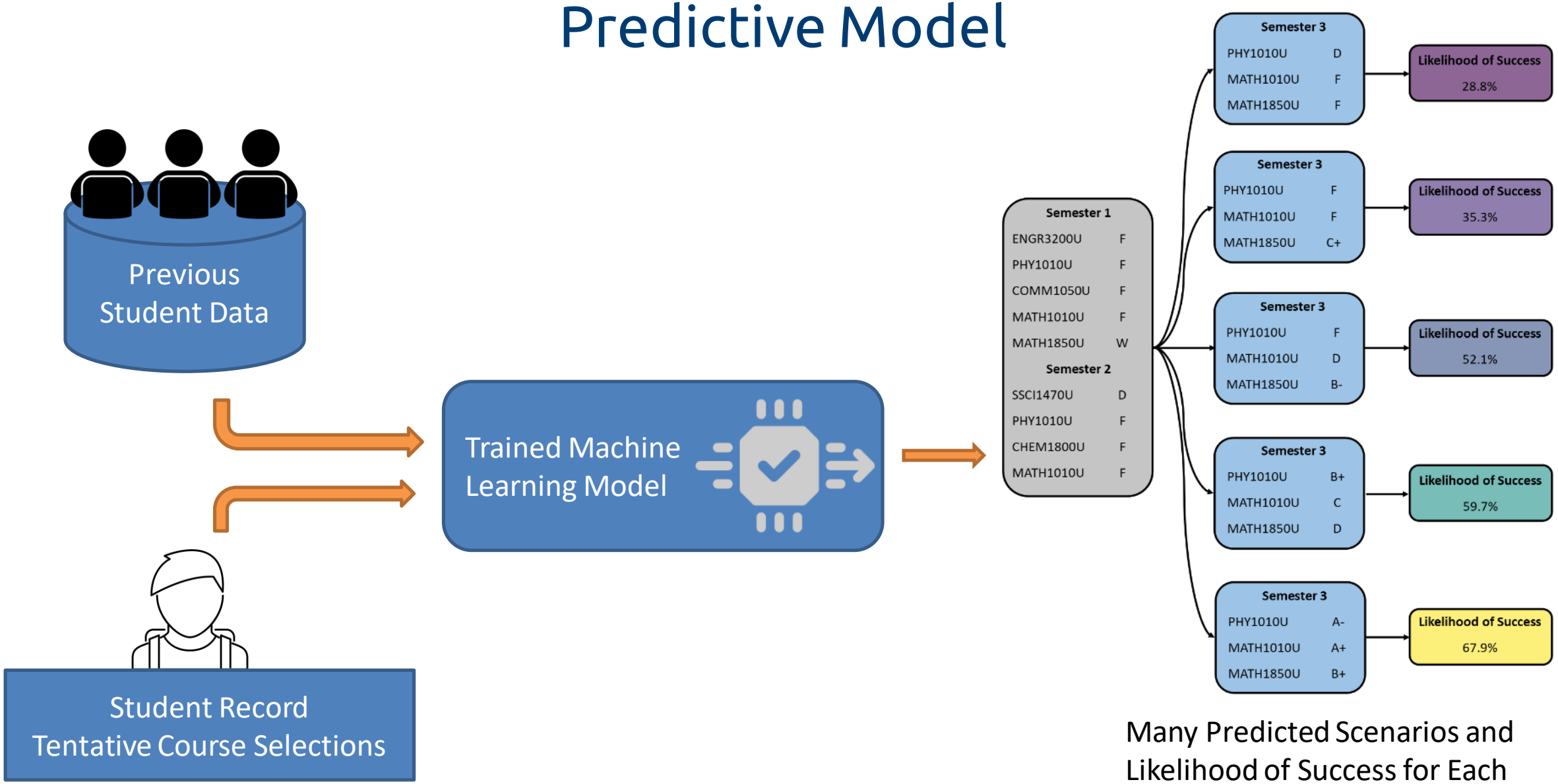
Predictive Model



Predictive Model



Predictive Model



Many Predicted Scenarios and Likelihood of Success for Each

vialab
visualization for information analysis

Student ID: 186381

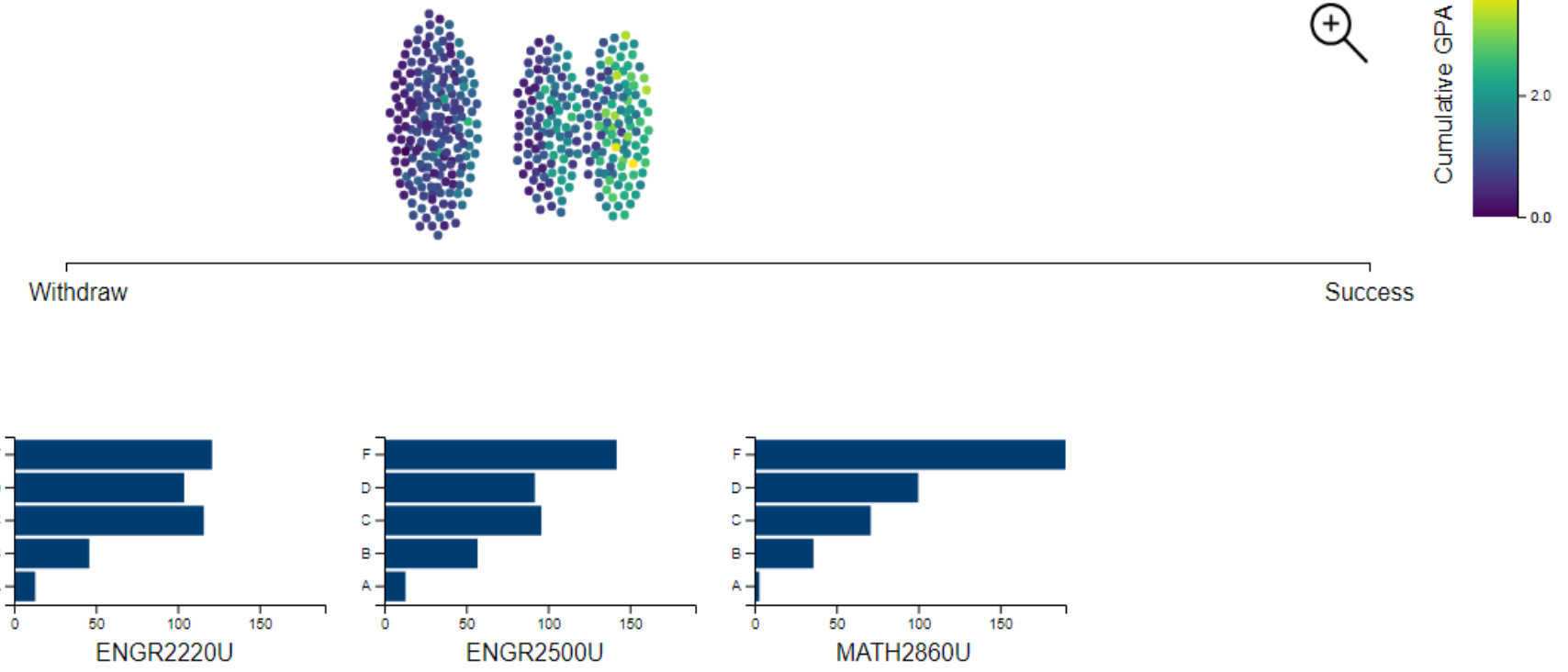
Student ID (6 digits):

Current semester number:

Courses (up to 7):

Add Course

Submit



vialab
visualization for information analysis

Student ID: 186381

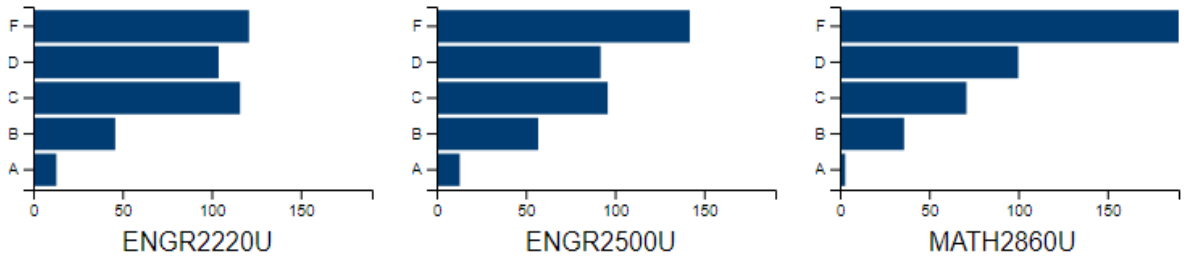
Student ID (6 digits):

Current semester number:

Courses (up to 7):

Add Course

Submit



vialab
visualization for information analysis

Student ID: 186381

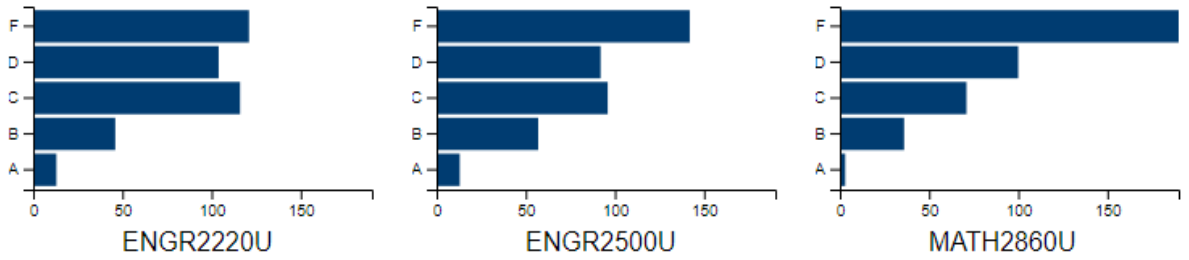
Student ID (6 digits):

Current semester number:

Courses (up to 7):

Add Course

Submit



vialab
visualization for information analysis

Student ID: 186381

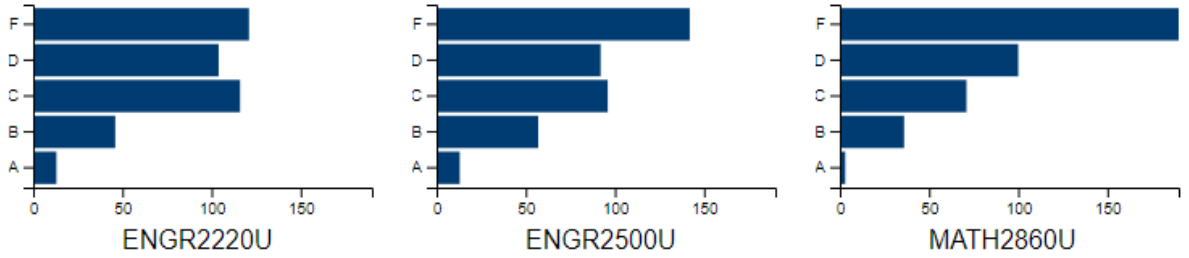
Student ID (6 digits):

Current semester number:

Courses (up to 7):

Add Course

Submit



Case Study - Holly

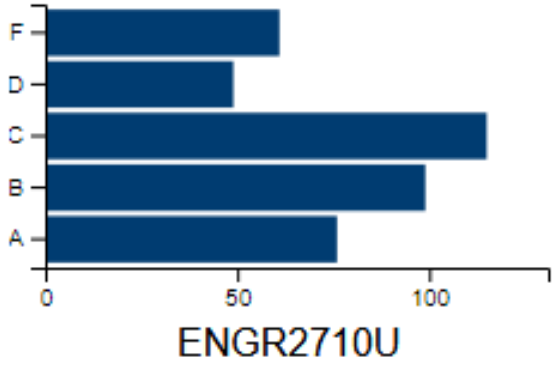
- Involved in clubs and varsity sports
- Struggled with Calculus and Physics
- Increased course load
- Increased demand from varsity team

Program	Software Engineering
Semester 1 GPA	2.88
Semester 2 GPA	1.67
Cumulative GPA	2.27

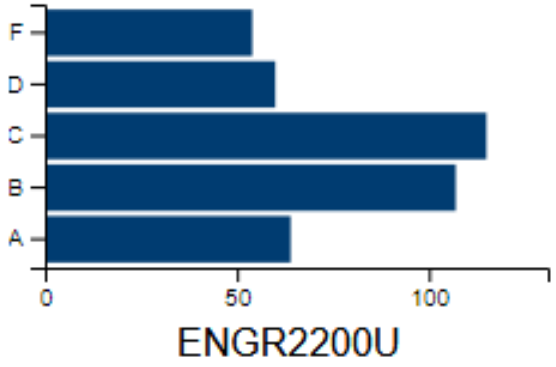
Holly's Plan

- Predict likelihood of success in semester 3
- 4 required courses and a liberal studies elective

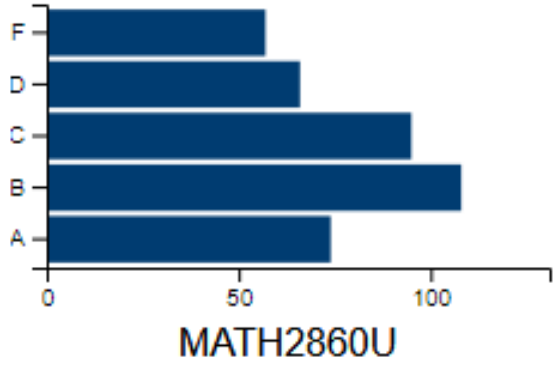
Course Code	Course Name
ENGR2110U	Discrete Mathematics
ENGR2200U	Elec. Eng. Fundamentals
ENGR2710U	Object Oriented Programming
MATH2860U	Differential Equations



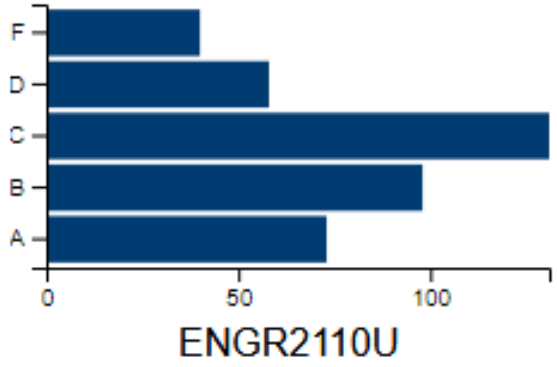
(Programming)



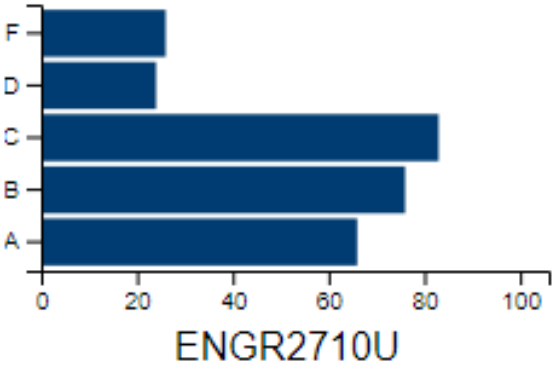
(Electrical Engineering)



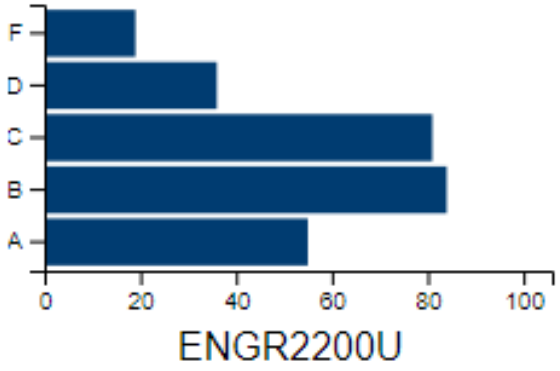
(Differential Equations)



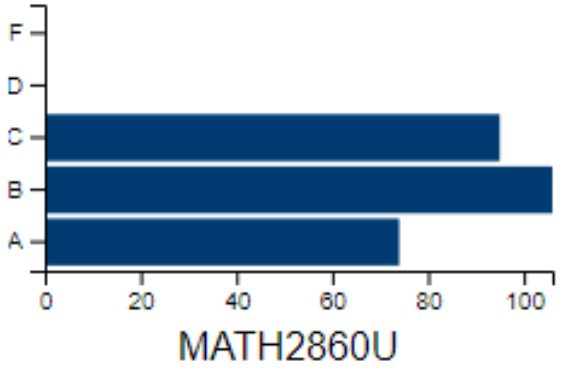
(Discrete Math)



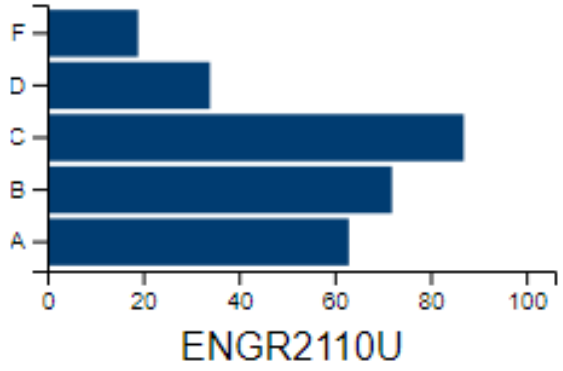
(Programming)



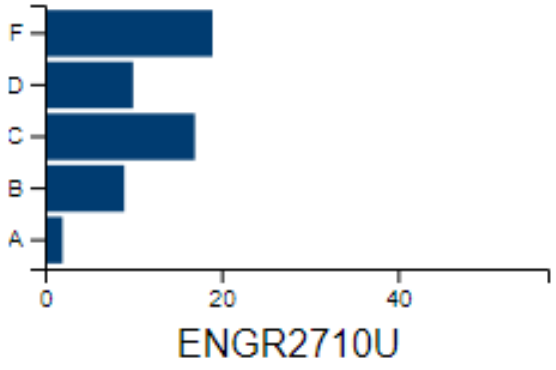
(Electrical Engineering)



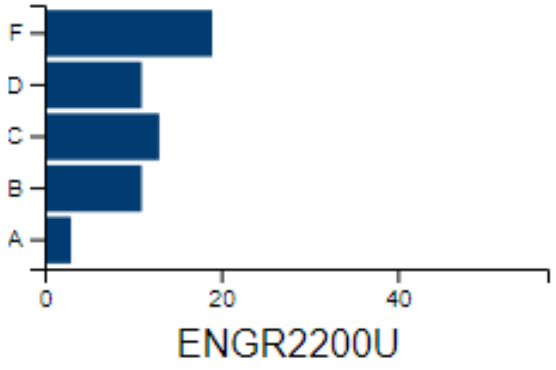
(Differential Equations)



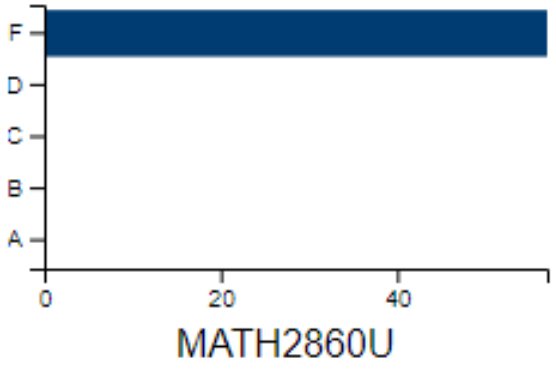
(Discrete Math)



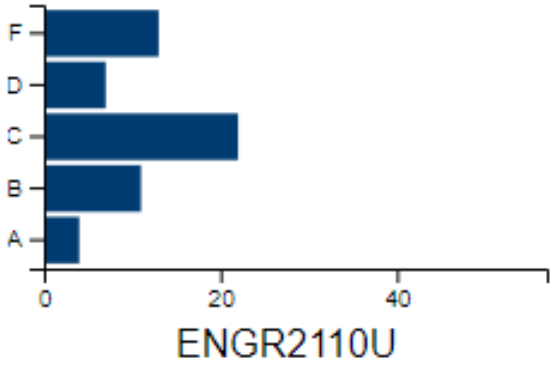
(Programming)



(Electrical Engineering)



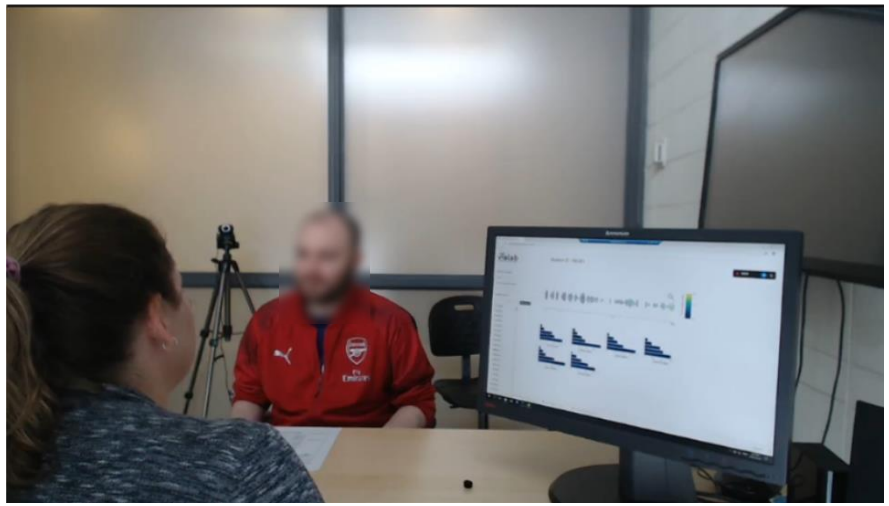
(Differential Equations)

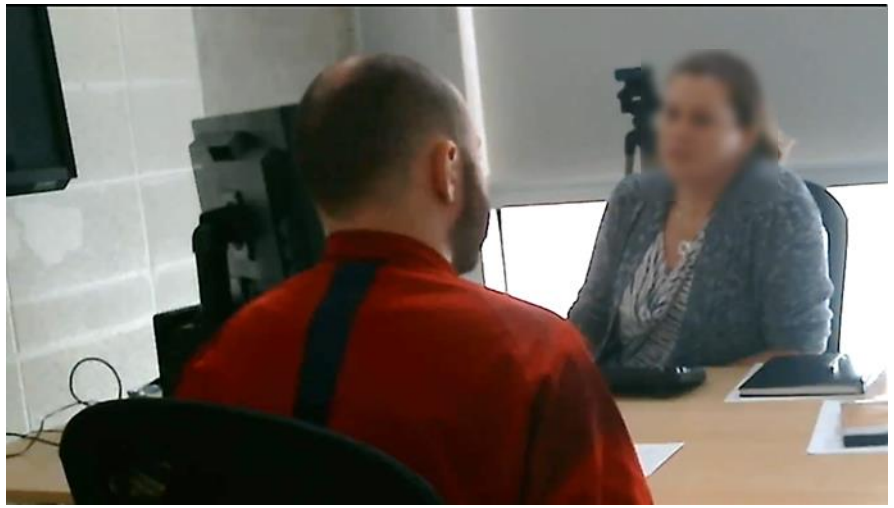


(Discrete Math)

Impact

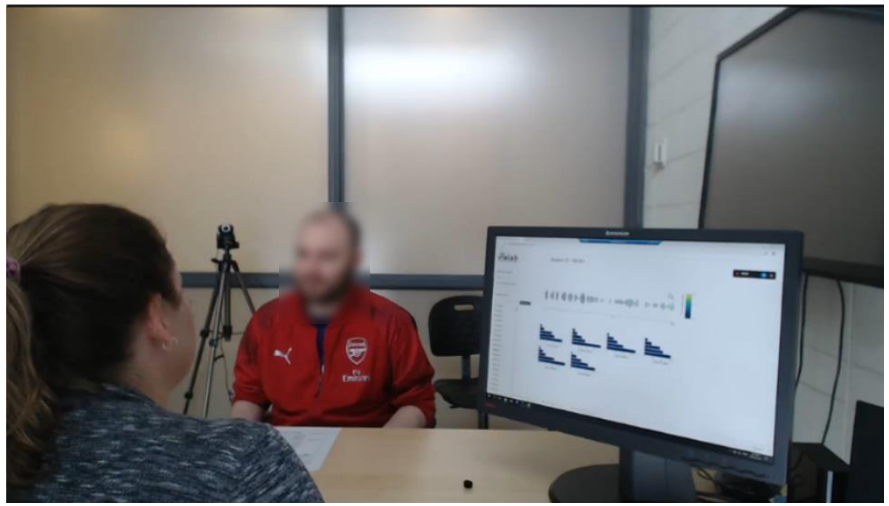
- 10 mock advising sessions conducted
- Students assigned a *persona* for the experience



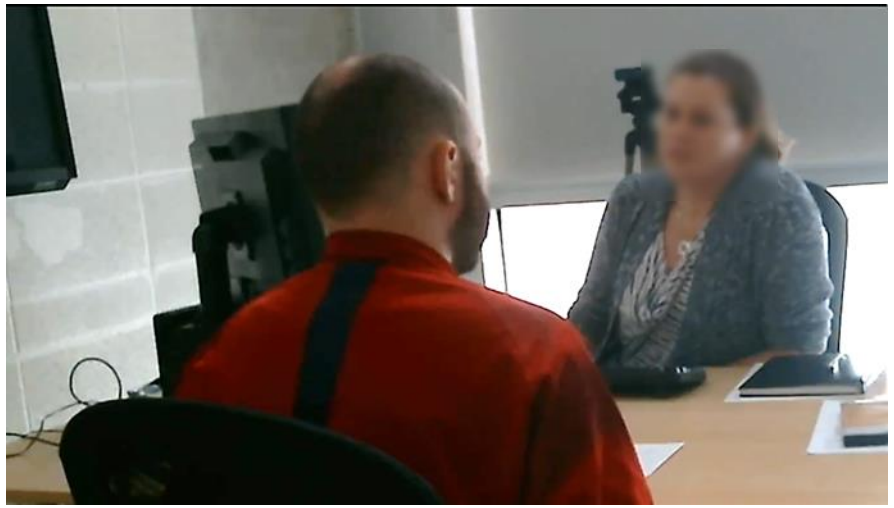


Impact

- 10 mock advising sessions conducted
- Students assigned a *persona* for the experience

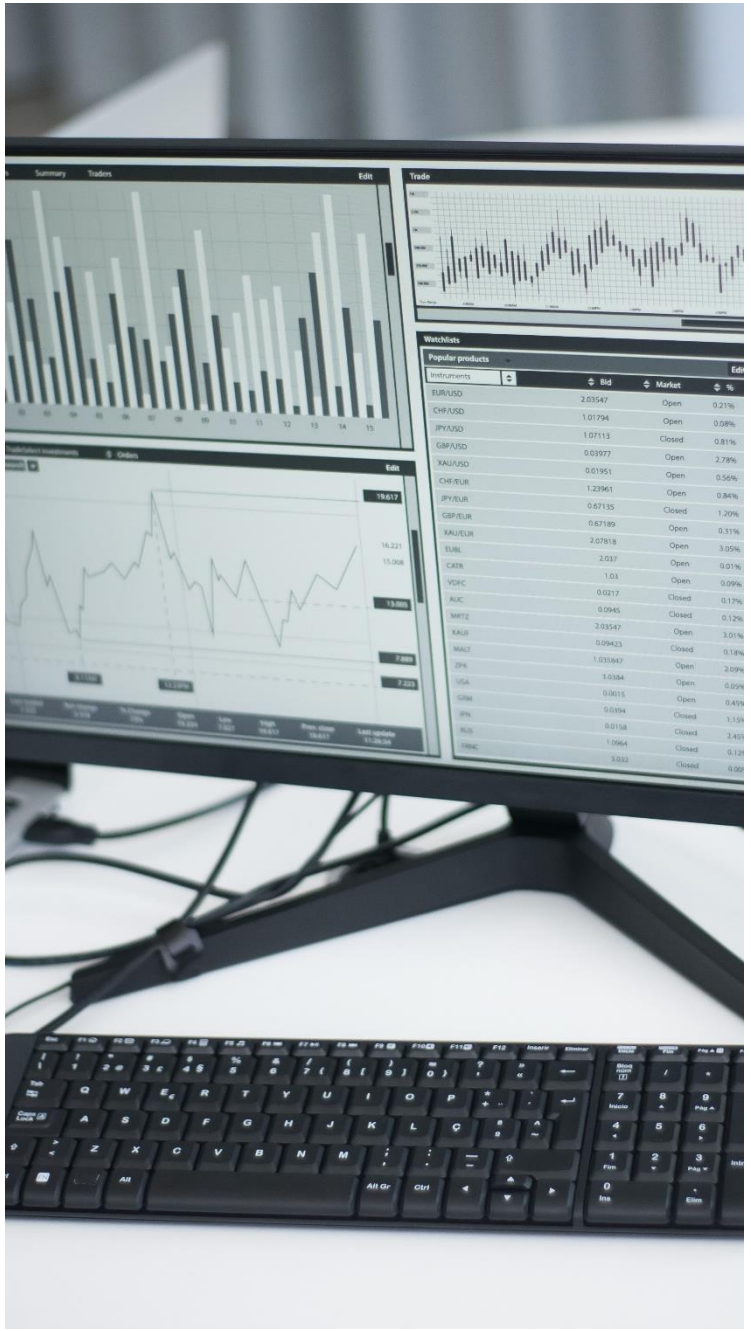


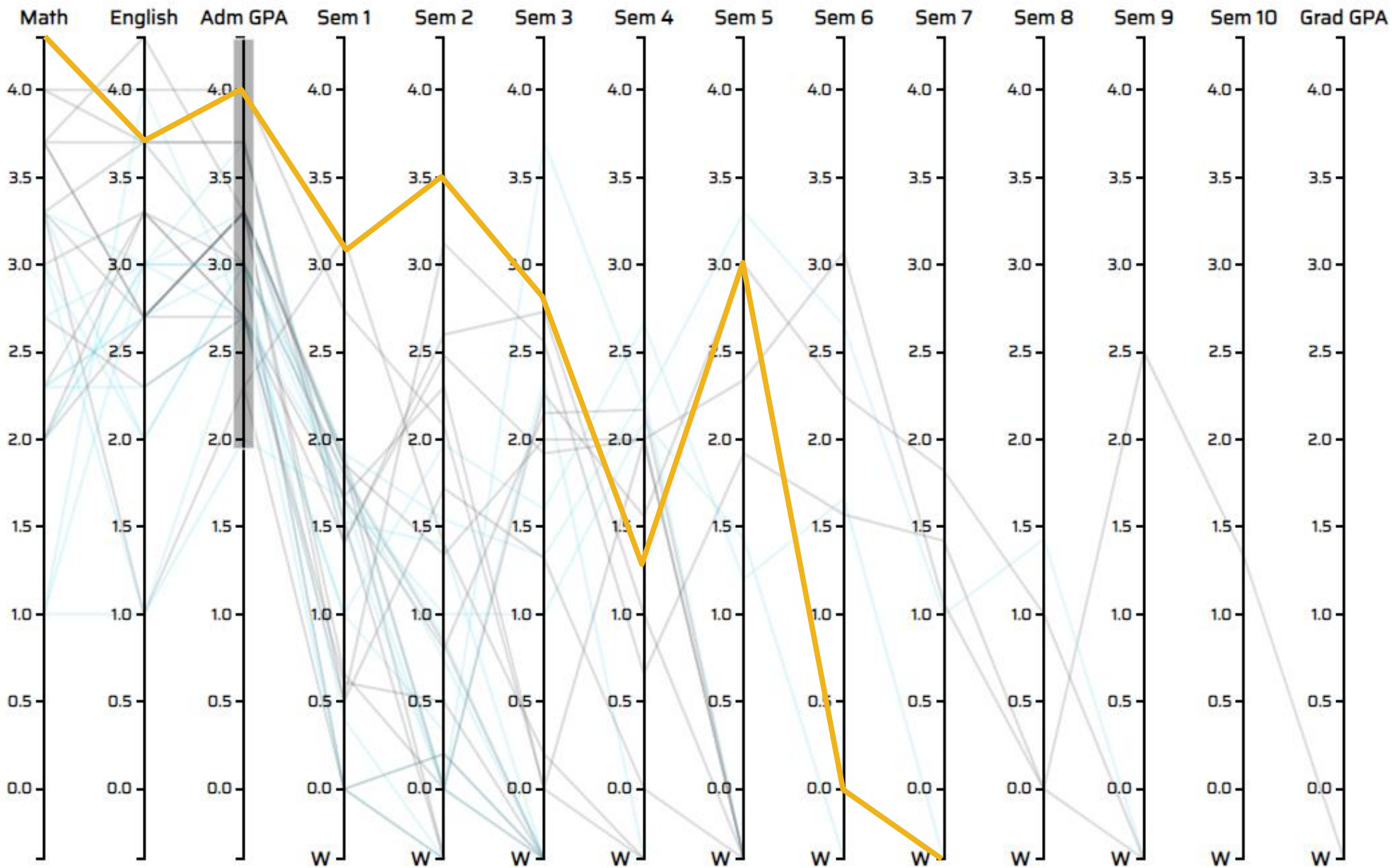
- “Motivating”, “Explore different paths”
- 3 of 4 advisors wanted to continue to use the system; the fourth wanted more training
- Use of technology introduced long stretches of silence (data input, interpretation)
  - Two students were not aware that the advisor was viewing data related to their case



Limitations

- Data quality issues can impact prediction confidence
  - Courses change names, numbers
  - Unusual paths are underrepresented in the data
  - Students withdraw early, when we have the least info



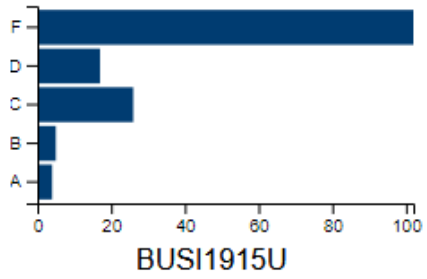

Math
English
Adm GPA
Sem 1
Sem 2
Sem 3
Sem 4
Sem 5
Sem 6
Sem 7
Sem 8
Sem 9
Sem 10
Grad GPA
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
W

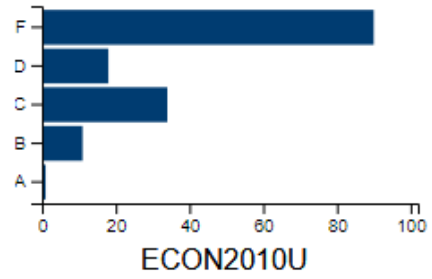
Limitations

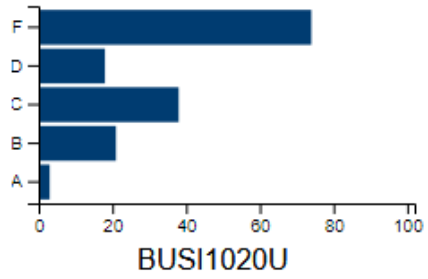
- Limited view of inputs and predictions
  - Data does not account for all the impacts on student success – especially personal circumstances
  - Predictions only vary courses and grades

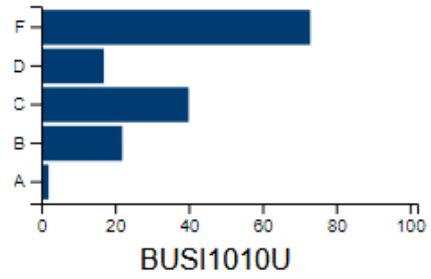
Cautions

- Predicting failure can demotivate – other mental health impacts?



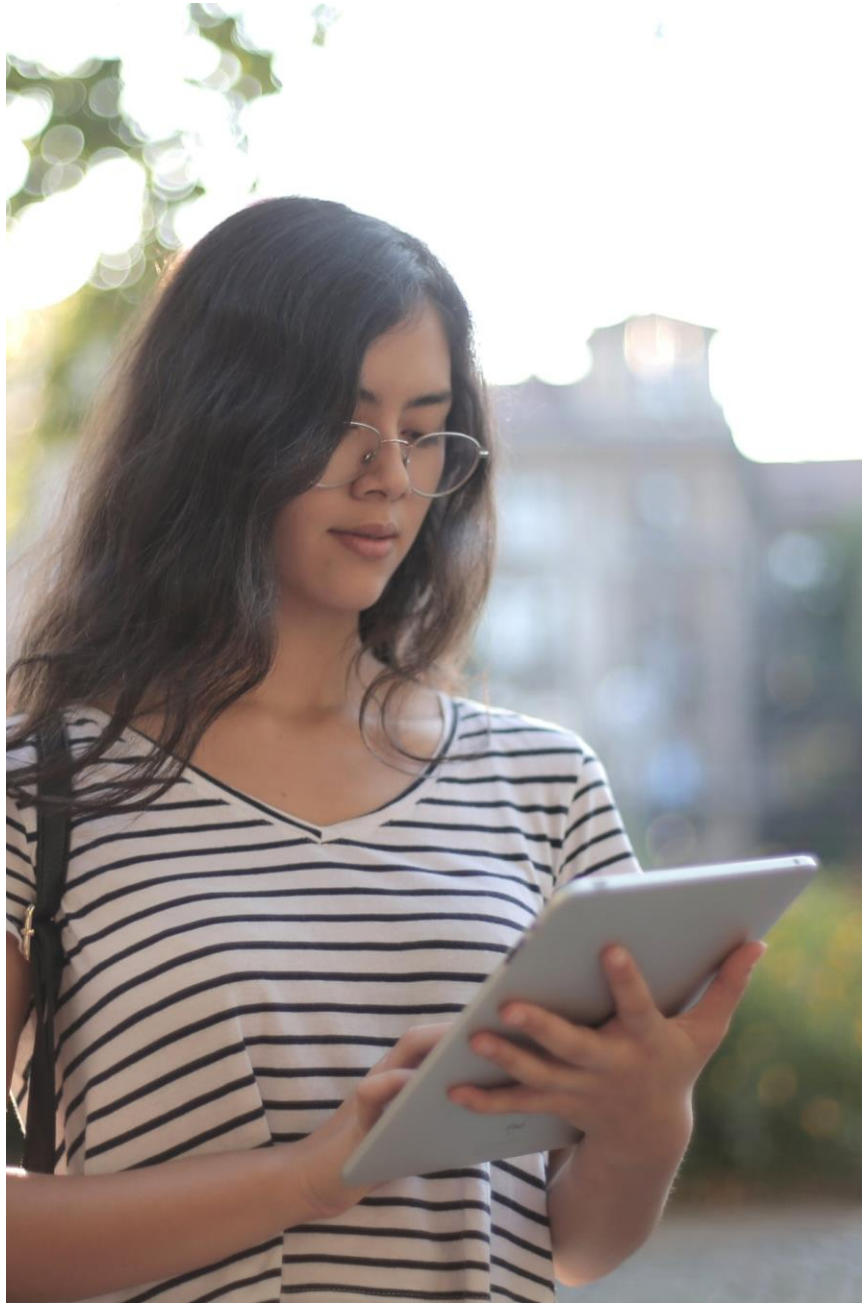






Uncertain Interpretation

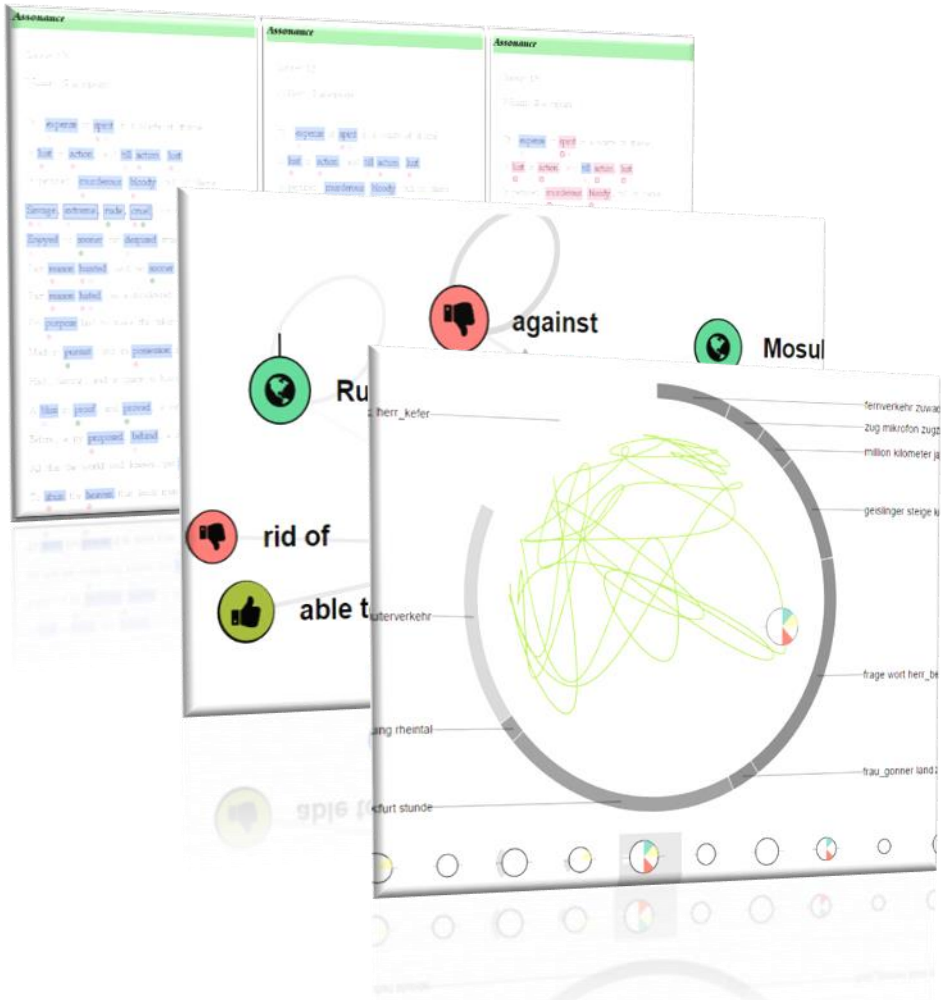
- People struggle to judge uncertainty
- Personality traits (optimistic/pessimistic) bias interpretation
- More AI explanation and detail is not always better (slower/more complex)



Moving Forward

- *Human-in-the-loop*, AI-informed advising strategy
- Ethical AI, guard against inappropriate predictions
- Train staff to use analytics with students
- Empower students to examine data
- Integration with LMS/Registration systems

- Should we harvest more data?
  - Time on campus (WiFi connections)
  - Contacts with advising
  - Messages and time spent in LMS
  - ~~Demographic data~~



Christopher.Collins@ontariotechu.ca **@chrisnf**
http://vialab.ca

NSERC CRSNG
INNOVATION.CA
CANADA FOUNDATION FOR INNOVATION | FONDATION CANADIENNE POUR L'INNOVATION
Ontario
Canada Research Chairs
www.chairs-chaires.gc.ca

Human and AI teaming, AI writers, and the rise of Digital Teachers

Isabel Pedersen, PhD

@isabel_pedersen

Council on University Planning and Analysis (CUPA) conference 2022

June 21, 2022

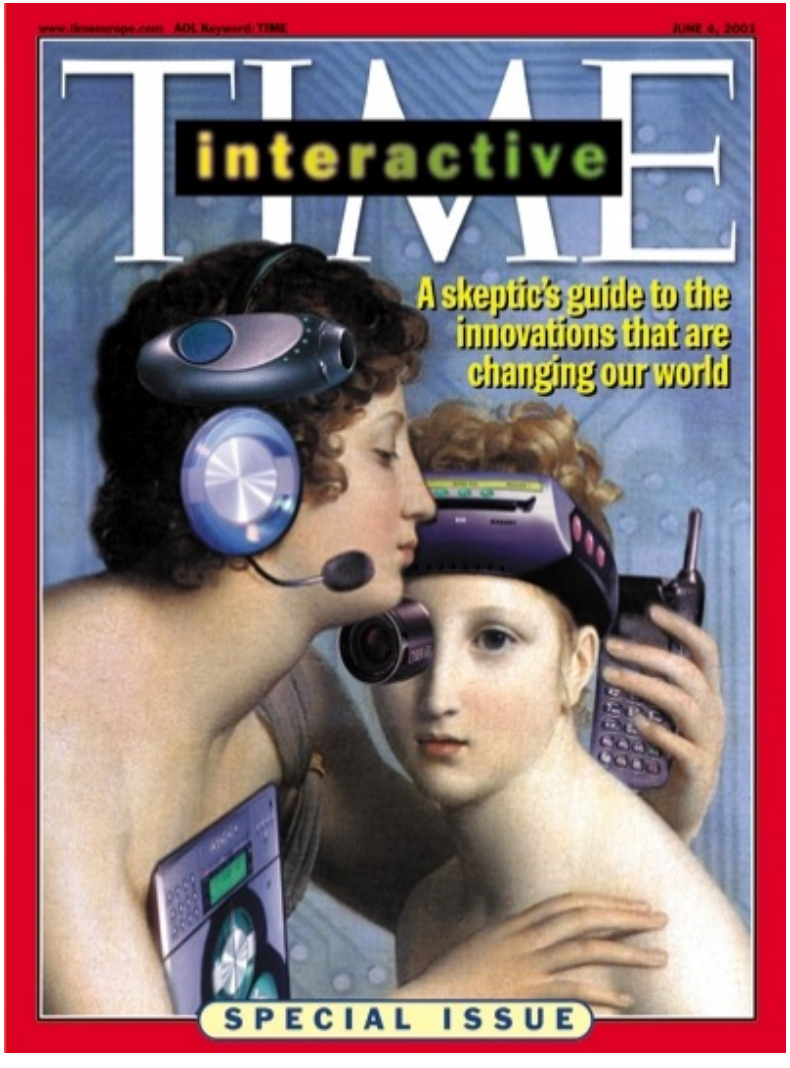
Digital Life Institute

OntarioTech UNIVERSITY

Canada Research Chairs / Chaires de recherche du Canada

Canada

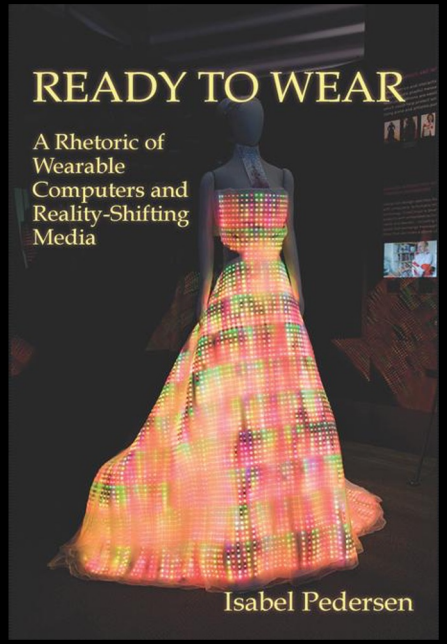
Decimal.



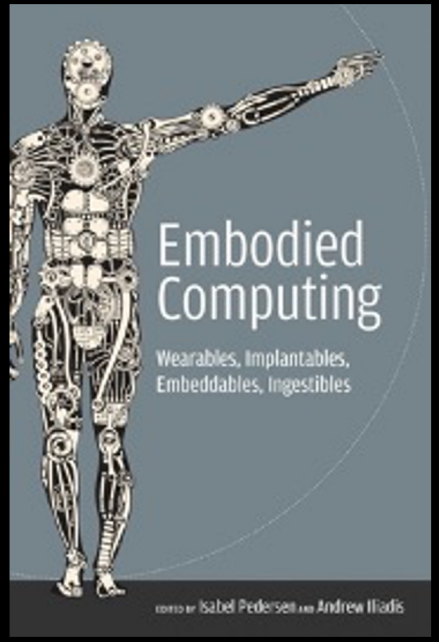
Time Magazine

June 2001

Digital Life Institute



Ready to Wear
Isabel Pedersen
Parlor Press
2013



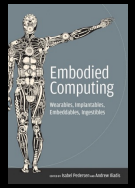
Embodied Computing
Isabel Pedersen and
Andrew Iliadis
MIT Press
2020

Writing Futures
Ann Hill Duin and
Isabel Pedersen
Springer
2021

Forthcoming
Augmentation Technology
Ann Hill Duin and
Isabel Pedersen
Routledge
2023

Embodied Computing:

Wearables, Implantables, Embeddables, Ingestibles
edited by Isabel Pedersen & Andrew Iliadis
MIT press, 2020



Continuum of Embodiment

Topographical	Visceral	Ambient
‘On bodies’	‘In bodies’	‘Around bodies’
Smartwatches	brain interfaces	ingestible tech	robots	smart cities
Smartphones	AR/VR headsets	neural implants	remote facial recognition

Biometric Data & Artificial Intelligence

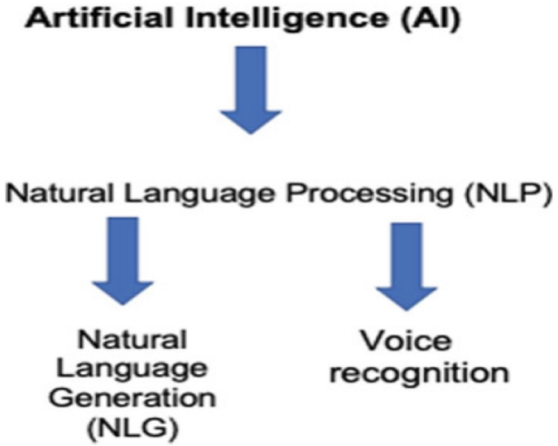
Image credit: https://www.maxpixel.net/Data-Computer-Hacking-Hack-Technology-Coding-Code-2275593

AI Writers

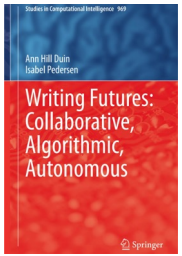
What are they?
Are we prepared?

Case Study on AI writers and Automating writing

"Professional writing and digital publishing platform companies increasingly require human writers to employ AI for automating and analyzing writing tasks across a range of functions that are becoming ever more intertwined."

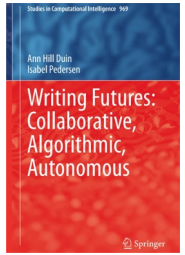


Writing Futures: Collaborative, Algorithmic, Autonomous
Ann Hill Duin and Isabel Pedersen
Springer 2021
P. 91



Case Study on AI writers and Automating writing

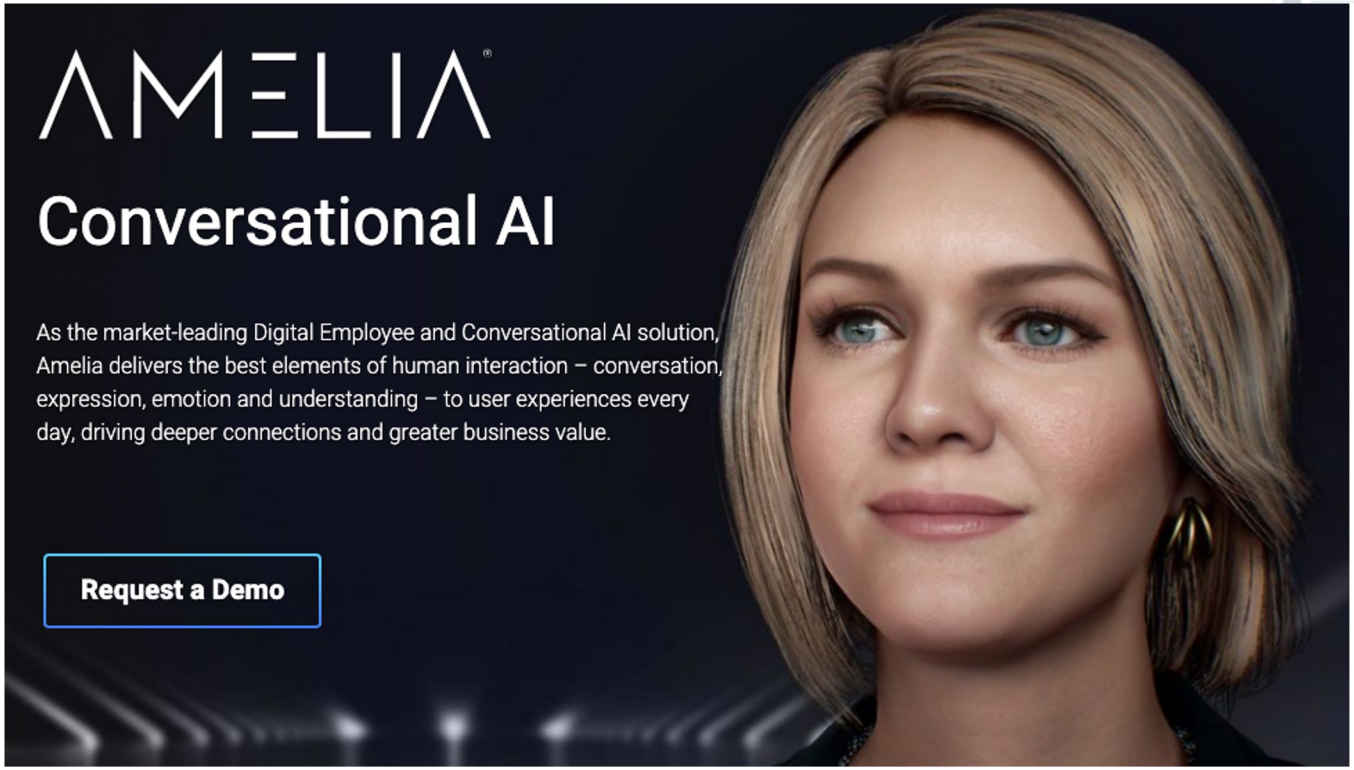
Fig. 4.3 Screenshot of AI Writer website
(Photo permission: AI Writer.com)



Artificial Humans & Digital Teachers

What are they?

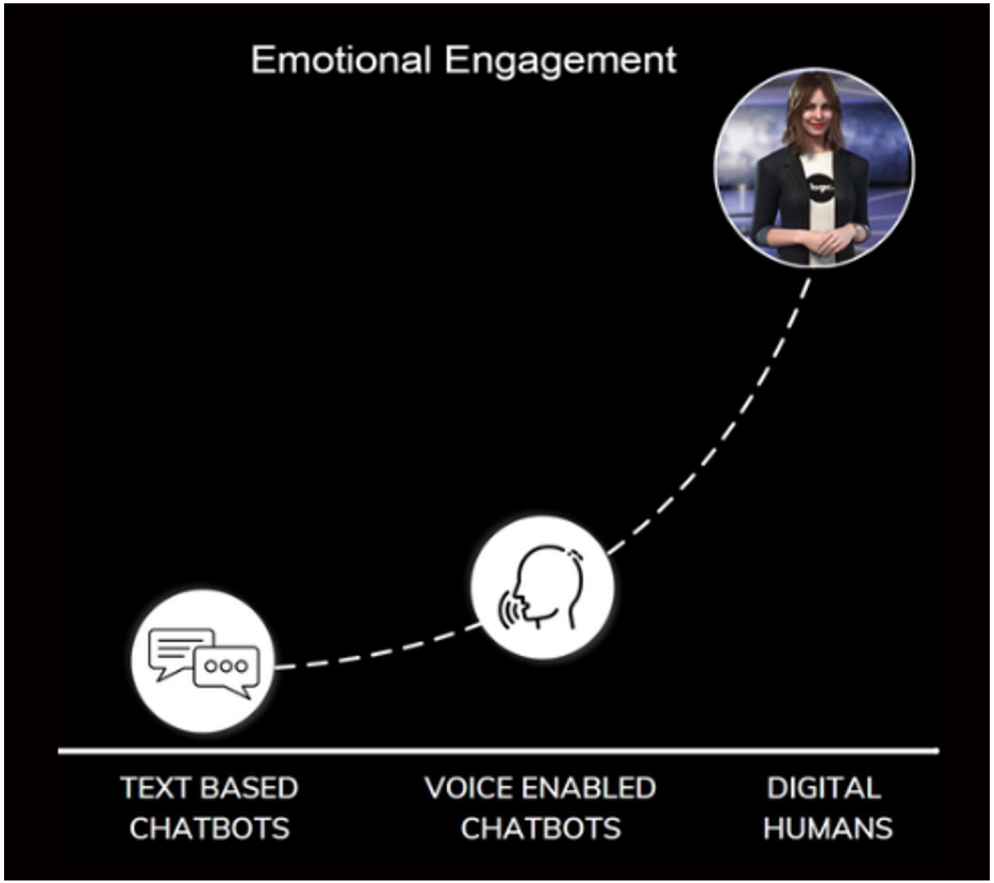
Are we prepared?



https://amelia.ai

Video

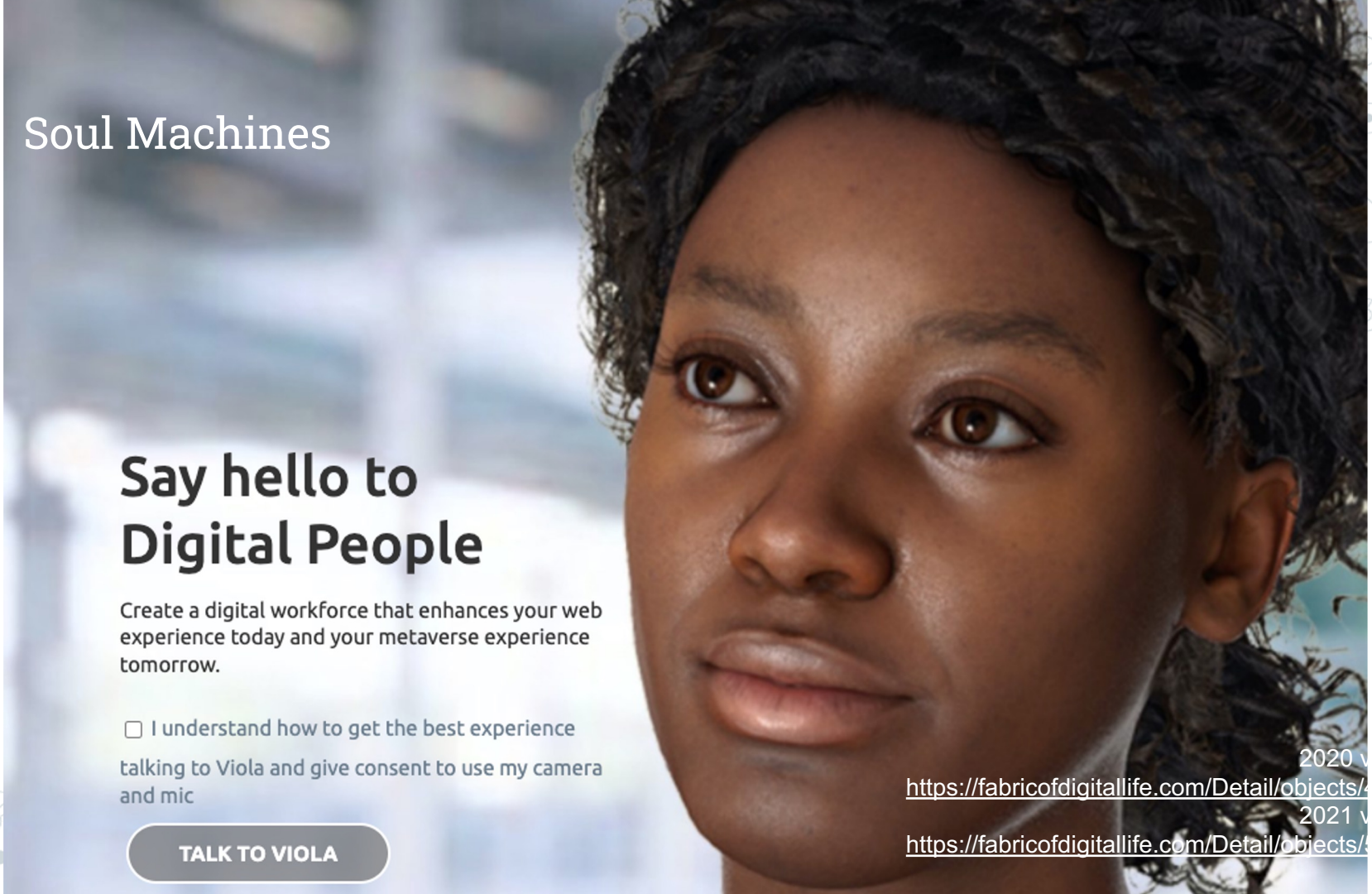
https://fabricofdigitallife.com/Detail/objects/5399



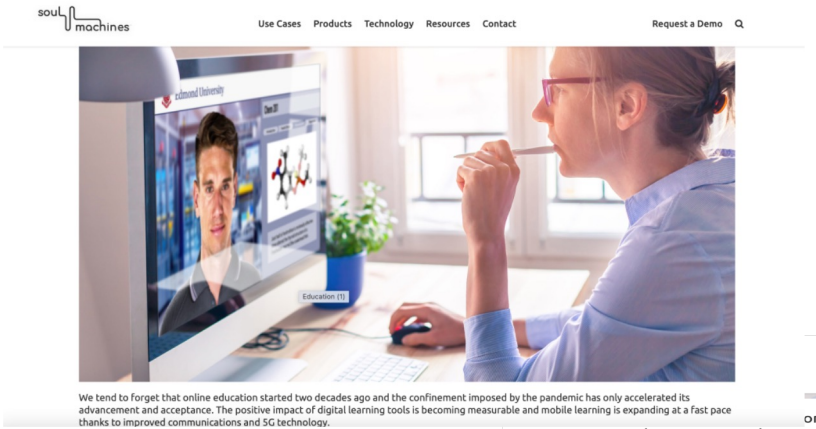
“Digital humans elevate today’s chatbots and are quickly becoming the ultimate user interface.”

Quantum Capture

https://www.quantumcapture.com/why-use-a-virtual-human


Soul Machines
Say hello to Digital People
Create a digital workforce that enhances your web experience today and your metaverse experience tomorrow.
I understand how to get the best experience talking to Viola and give consent to use my camera and mic
TALK TO VIOLA
2020 v
https://fabricofdigitallife.com/Detail/objects/
2021 v
https://fabricofdigitallife.com/Detail/objects/

Soul Machines: Education use case



We tend to forget that online education started two decades ago and the confinement imposed by the pandemic has only accelerated its advancement and acceptance. The positive impact of digital learning tools is becoming measurable and mobile learning is expanding at a fast pace thanks to improved communications and 5G technology.

Use Cases Products Technology Resources Contact Request a Demo

online education started two decades ago and the confinement imposed by the pandemic has only accelerated its advancement and acceptance. The positive impact of digital learning tools is becoming measurable and mobile learning is expanding at a fast pace thanks to improved communications and 5G technology.

- 63% of US high school students use digital learning tools daily
- 81% of US college students agree that digital learning tools help them improve their grades
- In 2017, approximately 77% of US corporations used online learning, but 98% planned to incorporate it in their program by 2020.

Despite the positive transformation that is underway, online and mobile education must continue evolving and offer 1:1 personalization to make sure that the success of the students is not undermined by a lack of empathy and attention. Institutions also need to build scalable platforms which can deliver high-quality programs to an unprecedented number of students while coping with the alarming shortage of educators exacerbated by the pandemic (early retirement, burnout, demotivation to onboard eLearning).

Artificial Intelligence (AI) is an essential enabler to solve this problem. It is already well deployed for Natural Language Processing (NLP), context awareness, and other capabilities enhancing human-machine communications. But, a unique emerging value of AI in education will be the personalization of interactions with students and employees in training so they can thrive with digital learning technologies.

Soul Machines, the leader in humanizing AI

Since 2016, Soul Machines has been humanizing AI through a visual platform that is able to contextualize human interactions and interpret difficult elements such as tone of voice, cadence, and facial expressions. Soul Machines' patented Human OS Platform with Autonomous Animation is the basis for the creation of Digital PeopleTM who have the capacity to process complex information, take inputs, and respond accordingly.

Digital People can hear, see, understand, think and relate to customers autonomously in real-time and in as many as 12 languages. In education, their empathic human behavior transforms impersonal online interactions into meaningful visual connections making the students feel supported and mentored through their academic endeavors.

Case Study: Marketing AI Agents for Learning environments

Figure 3. Canbot's robot teaches a child at home without the presence of a human teacher

AI Agents, Humans and Untangling the Marketing of Artificial Intelligence in Learning Environments

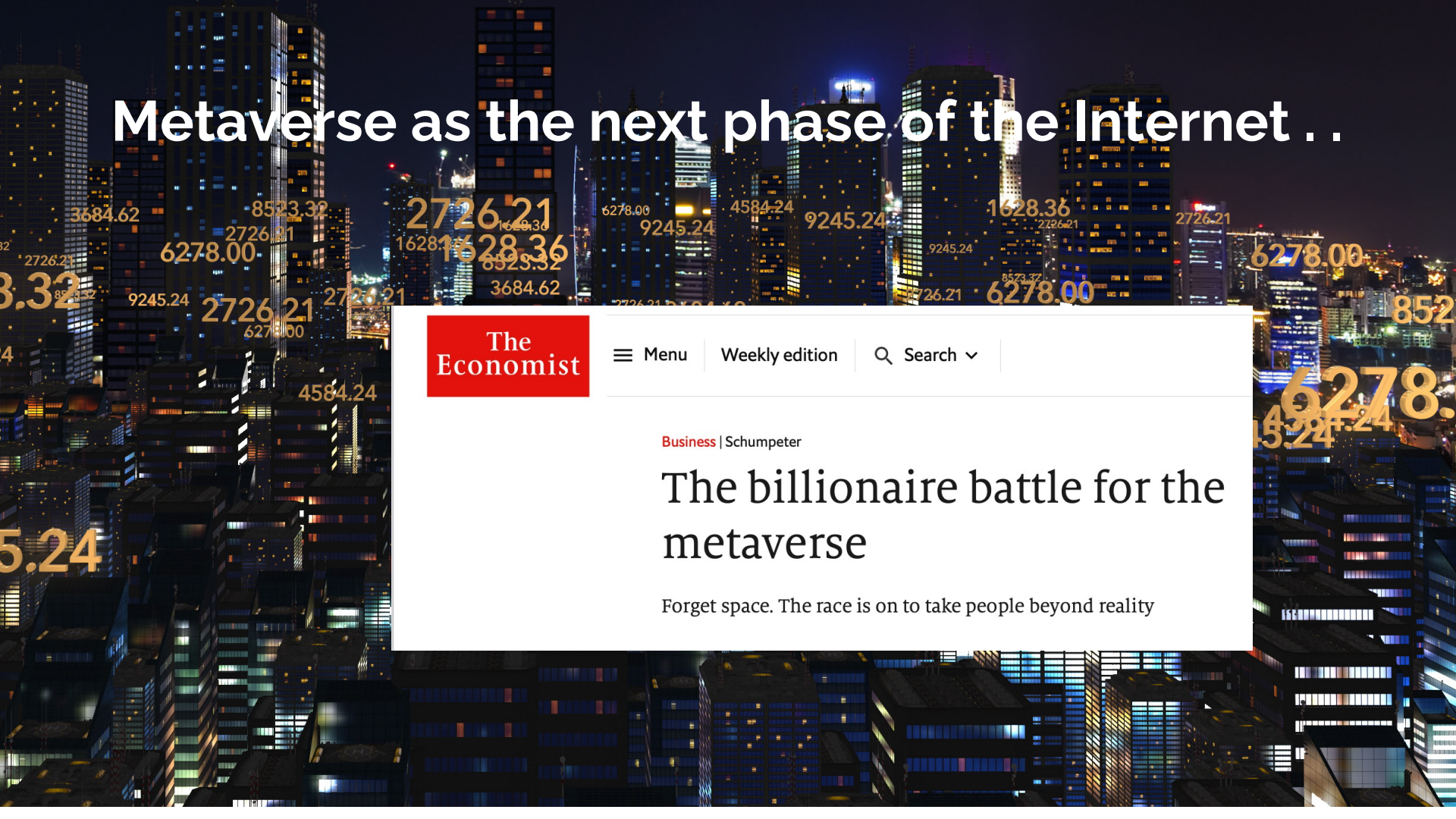
Isabel Pedersen & Ann Hill Duin, 2022

Conference: 55th Hawaii International Conference on System Sciences | 2022

Human-autonomy teaming

- How might educators think and respond critically to proposed teams of humans and autonomous agents?
- How should we envision the future of communication as artificial intelligence is increasingly capable of automated activities?

Metaverse as the next phase of the Internet . .



Digital Life Institute

About Clusters People Publications Events Contact

Mar 24

Upcoming Event

Social Impact of Emergent Embodied Computing →

Digital Life Institute examines the impact of digital technologies on humans.

It is an international research network of multidisciplinary scholars studying the social implications of disruptive digital technologies.

Research Clusters

https://www.digitallife.org

Special Thanks

Thank you | Merci

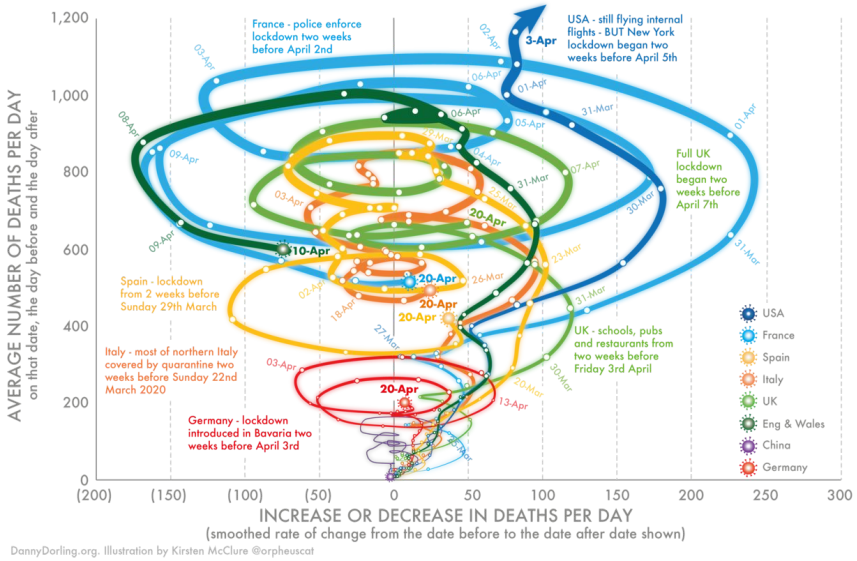
OPPORTUNITIES AND CHALLENGES FOR HUMAN-CENTERED VISUALIZATION

Tech With a Conscience:
Human-Centered AI and Ethical Elements of Data Visualization and Machine Learning

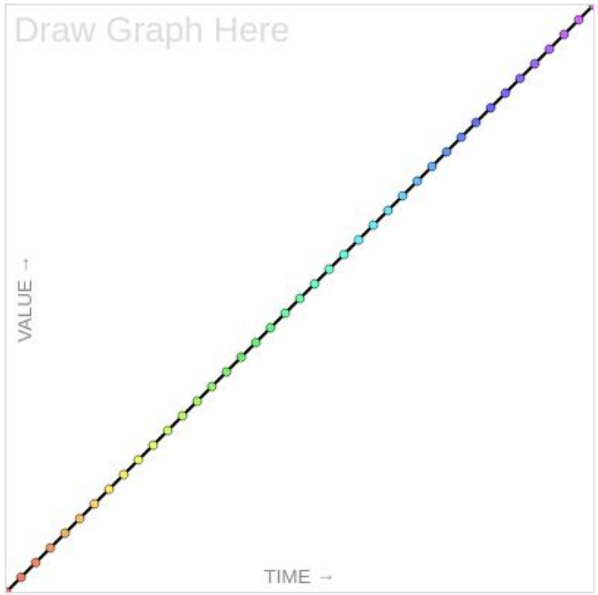
CUPA Conference
June 21, 2022

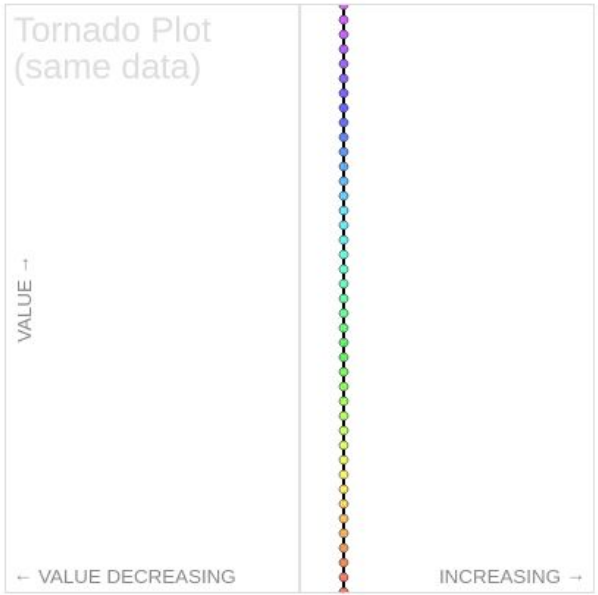
Gabby Resch, Assistant Professor
Faculty of Business and Information Technology, Ontario Tech University

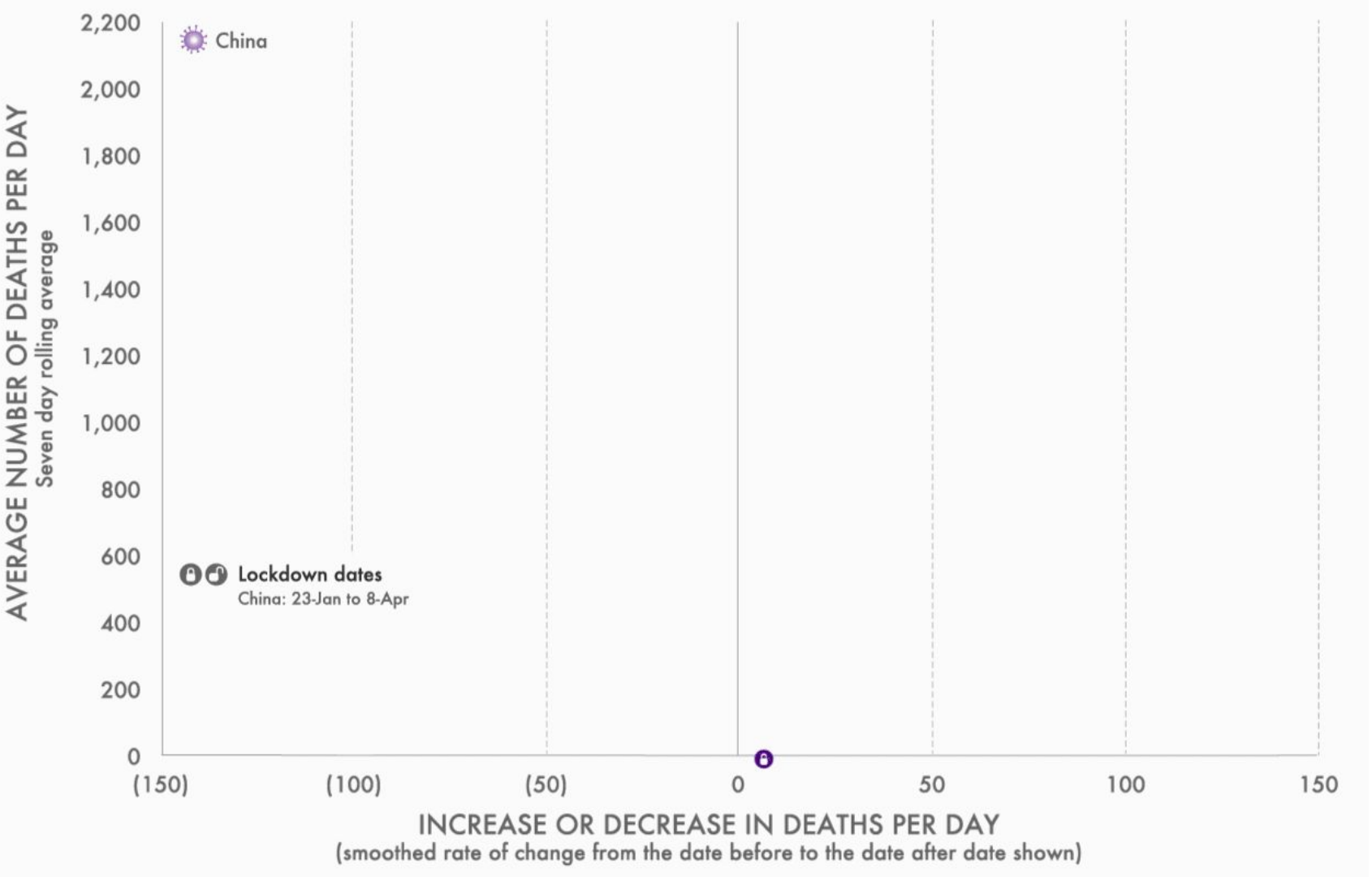
Challenges



- Misunderstanding Visualization
- Varying Degrees of Experience
- Avoiding Our Own Biases


Draw Graph Here
VALUE →
TIME →

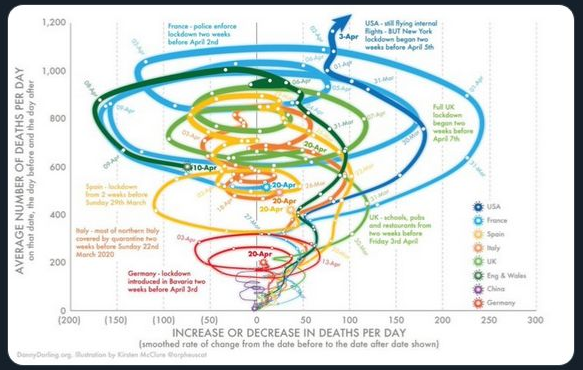

Tornado Plot
(same data)
VALUE →
← VALUE DECREASING
INCREASING →


China
AVERAGE NUMBER OF DEATHS PER DAY
Seven day rolling average
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
Lockdown dates
China: 23-Jan to 8-Apr
(150)
(100)
(50)
0
50
100
150
INCREASE OR DECREASE IN DEATHS PER DAY
(smoothed rate of change from the date before to the date after date shown)

Thread

Emma Wager
@emmawage

Calling for a temporary ban on data visualization until we figure out what is going on



12:32 PM · Apr 28, 2020 from San Bruno, CA · Twitter for iPhone

9.1K Retweets **1.6K** Quote Tweets **50.6K** Likes

Emma Wager @emmawage · Apr 28
Replying to @emmawage
I have nothing to promote but please stay home, wash your hands, and stop publishing charts with default Excel formatting

16 96 1.8K

Emma Wager @emmawage · Apr 28
And follow @CPR4healthcare!!

3 4 149

Search Twitter

New to Twitter?
Sign up now to get your own personalized timeline!
Sign up

Relevant people

Emma Wager
@emmawage
Follow
MPH. Projects & Research @CPR4healthcare. I ❤️ data, health policy, equity & human rights. Views are mine. Twitter is a bubble, so they're probably yours too.

What's happening

US news · Last night
Protesters and police clash in Philadelphia after officers shoot and kill local Black man
Trending with Philadelphia

Gaming · Trending
The PS5
27.6K Tweets

K-pop · Trending
bambam
145K Tweets

Politics · Trending
Liberal

COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Last Updated at (M/D/YYYY)
2022-01-18, 8:21 a.m.

Total Cases	Total Deaths	Total Vaccine Doses Administered
331,166,002	5,547,903	9,674,494,178

28-Day Cases	28-Day Deaths	28-Day Vaccine Doses Administered
55,249,094	182,694	876,442,708

Cases | Deaths by Country/Region/Sovereignty

US
28-Day: 15,288,117 | 41,974
Totals: 66,456,516 | 851,730

France
28-Day: 5,543,200 | 5,270
Totals: 14,297,325 | 127,975

United Kingdom
28-Day: 3,888,698 | 4,848
Totals: 15,407,223 | 152,577

Italy
28-Day: 3,384,942 | 5,613
Totals: 8,790,302 | 141,391

Spain
28-Day: 2,889,272 | 2,200
Totals: 8,424,503 | 90,993

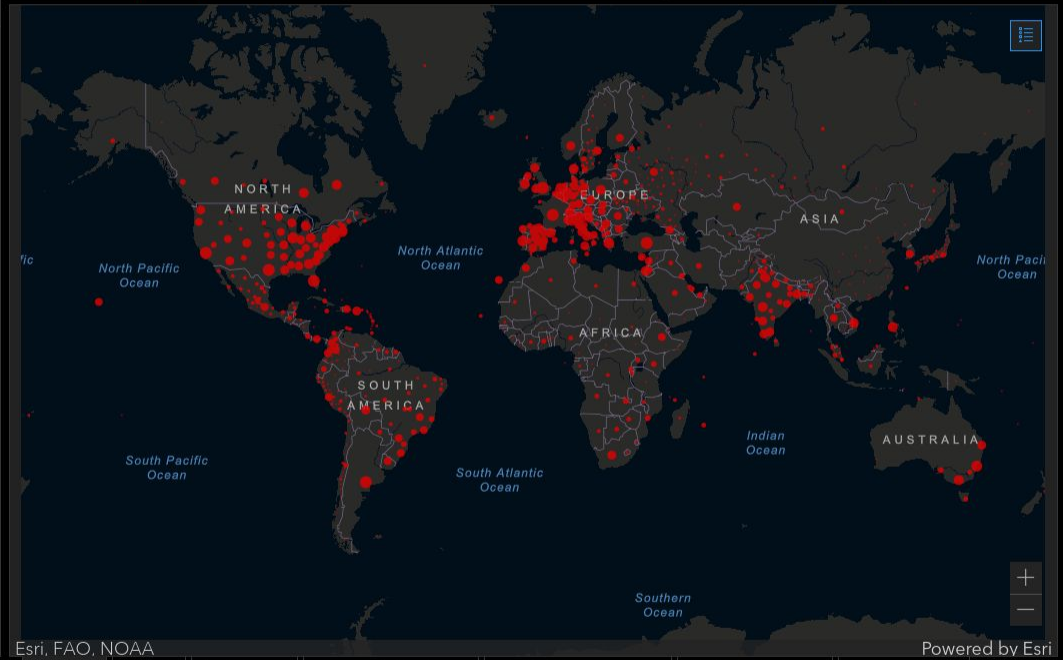
India
28-Day: 2,866,107 | 8,754
Totals: 37,618,271 | 486,761

Argentina
28-Day: 1,802,279 | 1,301
Totals: 7,197,323 | 118,231

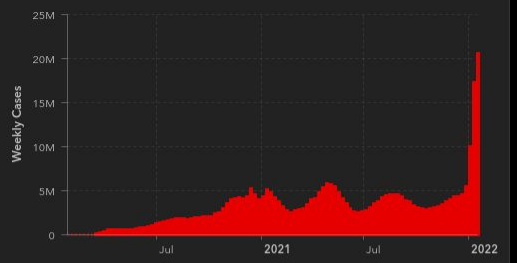
Australia
28-Day: 1,580,132 | 596
Totals: 1,876,035 | 2,776

Turkey

Admin0



28-Day | Totals | Incidence | Case-Fatality Ratio | Global Vaccinations | US Vaccinations | Terms of Use



Weekly | 28-Day

Total Confirmed
24,478

Confirmed Cases by Country/Region

- 24,266 Mainland China
- 25 Thailand
- 24 Singapore
- 22 Japan
- 17 Hong Kong
- 16 South Korea
- 13 Australia
- 12 Germany
- 11 US
- 11 Taiwan
- 10 Macau
- 10 Malaysia
- 8 Vietnam

Country | Province

Last Updated at
2/4/2020, 9:13 PM

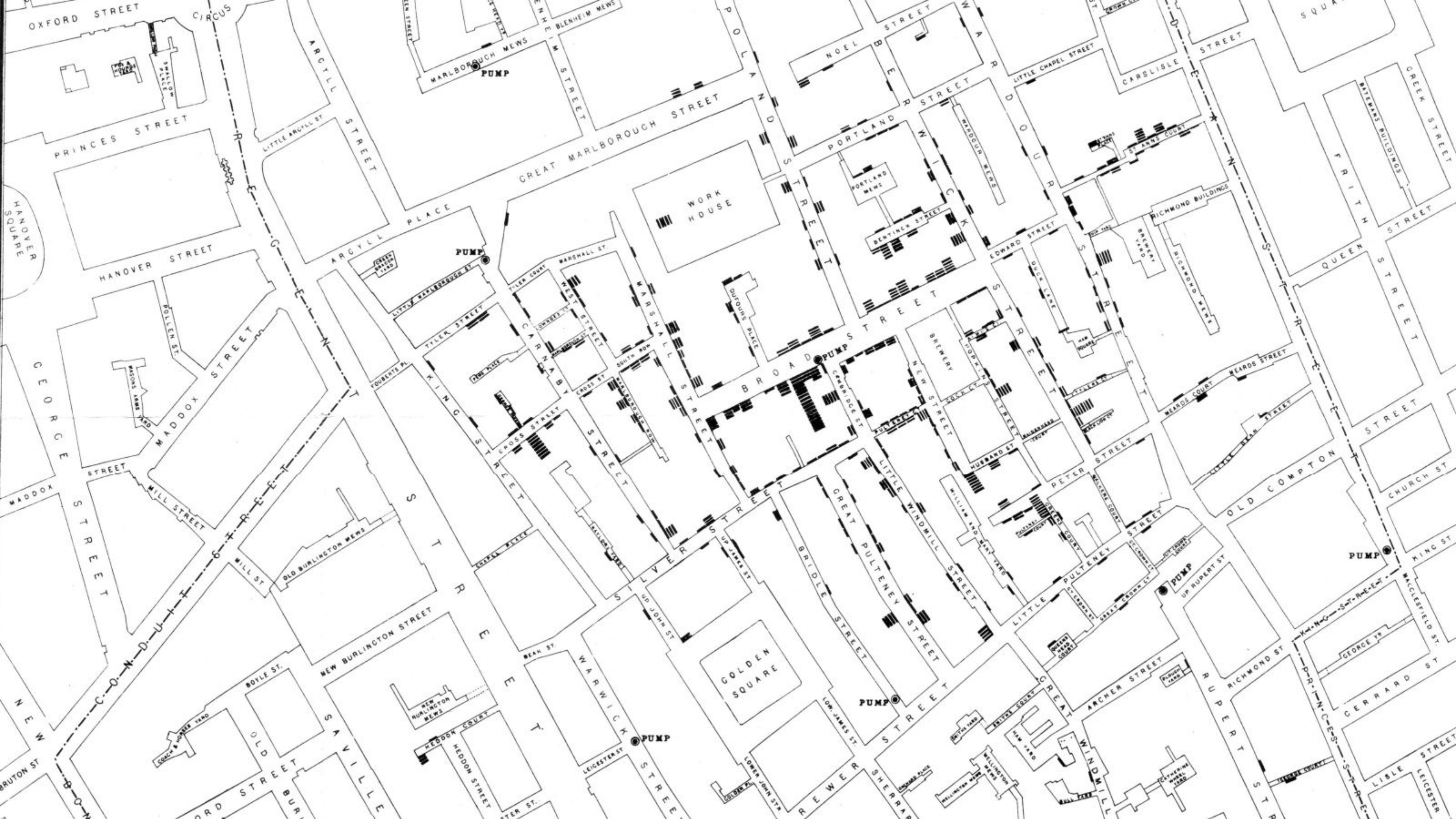
Total Deaths
492

- 479 deaths **Hubei** Mainland China
- 2 deaths **Henan** Mainland China
- 2 deaths **Chongqing** Mainland China
- 1 deaths **Sichuan** Mainland China
- 1 deaths **Shanghai** Mainland China
- 1 deaths **Beijing** Mainland China
- 2 deaths **Heilongjiang** Mainland China
- 1 deaths **Hebei** Mainland China

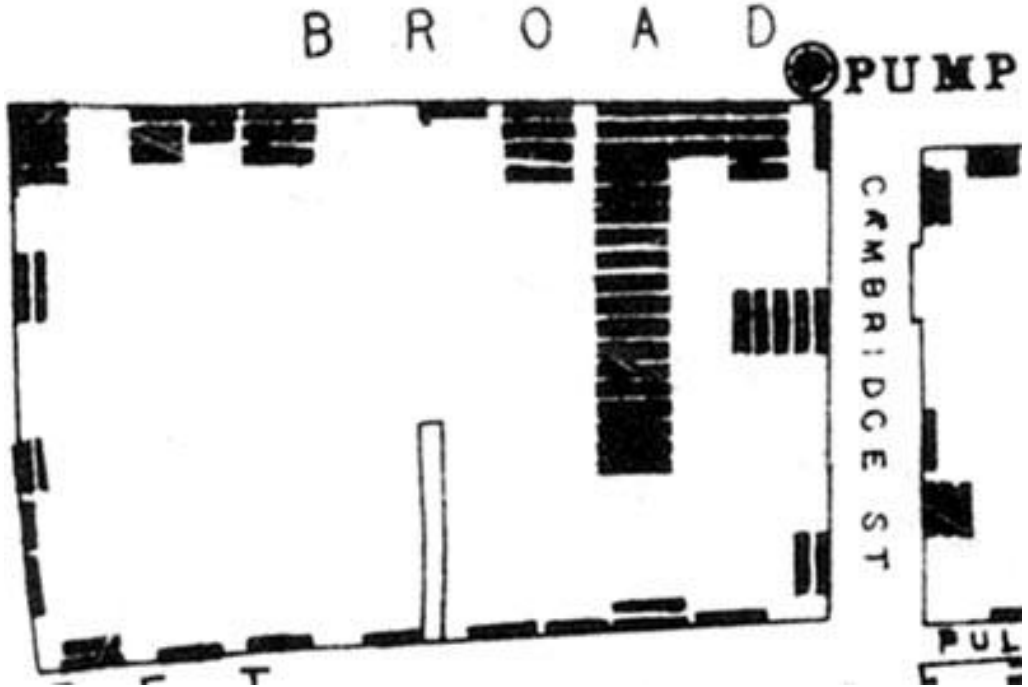
Total Recovered
906

- 522 recovered **Hubei** Mainland China
- 63 recovered **Zhejiang** Mainland China
- 41 recovered **Henan** Mainland China
- 35 recovered **Hunan** Mainland China
- 32 recovered **Guangdong** Mainland China
- 27 recovered **Jiangxi** Mainland China
- 23 recovered **Beijing** Mainland China
- 23 recovered

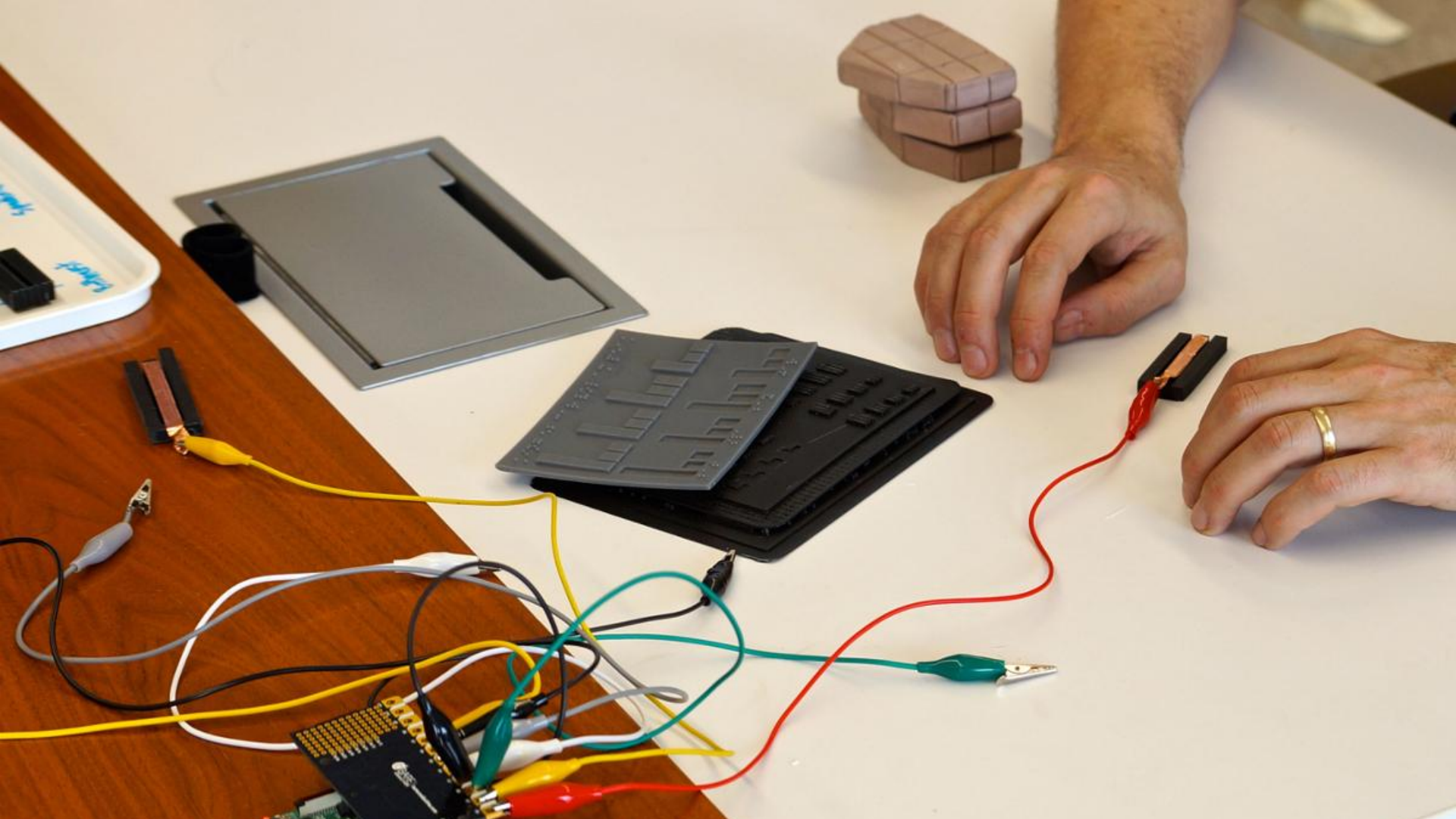
Visualization: JHU CSSE.
Automation Support: Esri Living Atlas team.
Read more in this blog.
Data sources: WHO, CDC, ECDC, NHC and DXY.
Downloadable Google Sheet (new link): Here. Time series table: Here. Feature layer: Here.
Point level: City level - US, Canada and Australia;
Province level - China; Country level - other countries.
Contact US

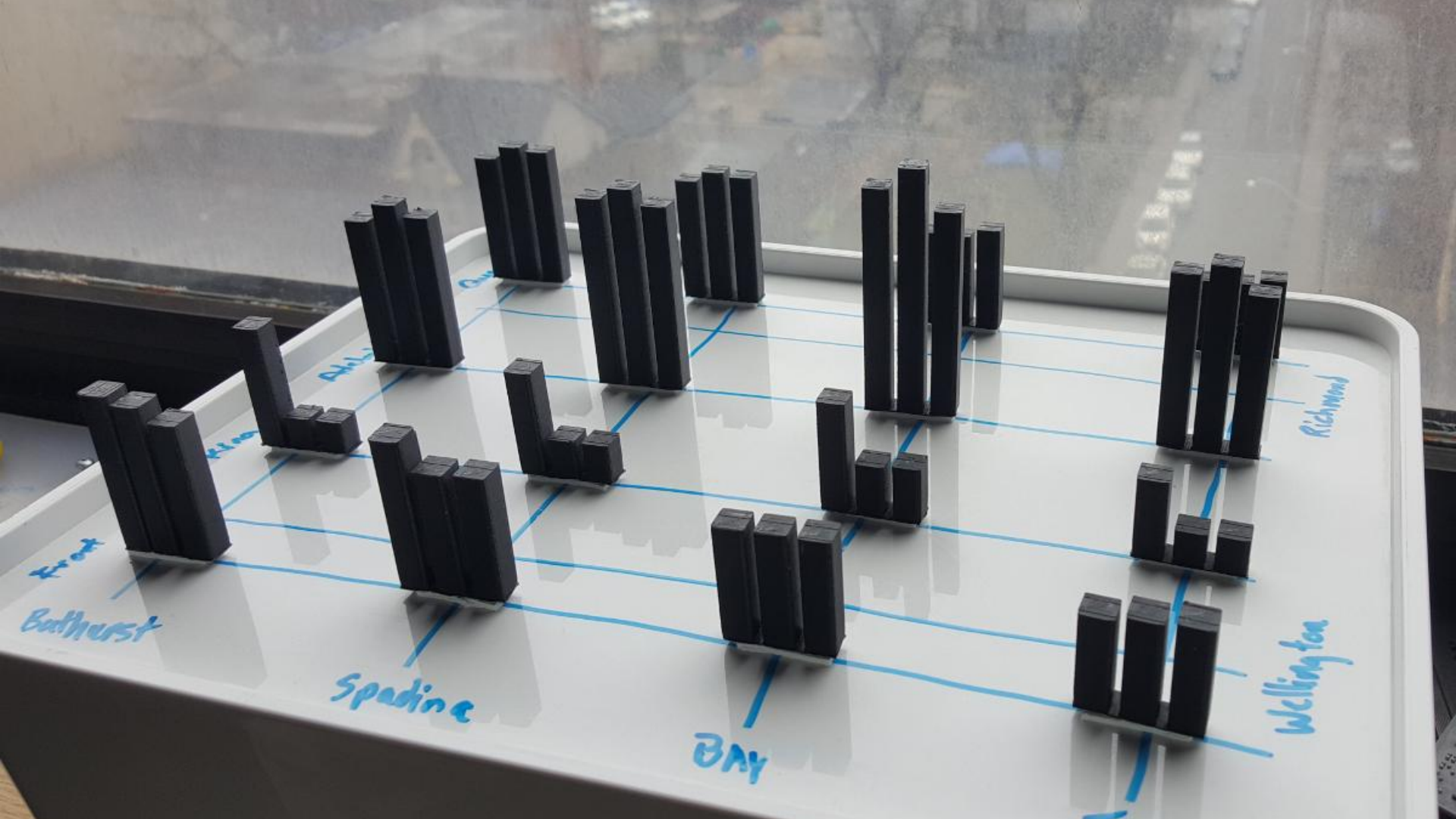


OXFORD STREET
CIRCUS
PRINCES STREET
HANOVER SQUARE
HANOVER STREET
GEORGE STREET
MADDOX STREET
CONDUIT STREET
REGENT STREET
ARGYLL STREET
ARGYLL PLACE
LITTLE ARGYLL ST.
MARLBOROUGH MEWS
BLENHEIM MEWS
BLENHEIM STREET
GREAT MARLBOROUGH STREET
POLAND STREET
NOEL STREET
BERWICK STREET
WARDOUR STREET
PORTLAND STREET
PORTLAND MEWS
LITTLE CHAPEL STREET
CARLISLE STREET
DEAN STREET
SOHO SQUARE
FRITH STREET
GREEK STREET
ST ANNS COURT
RICHMOND BUILDINGS
RICHMOND MEWS
QUEEN STREET
WORK HOUSE
BENTINCK STREET
EDWARD STREET
BROAD STREET
DUFOURS PLACE
MARSHALL STREET
MARSHALL ST.
TYLER STREET
LITTLE MARLBOROUGH ST
CARNABY STREET
KING STREET
CROSS STREET
SOUTH ROW
SILVER STREET
CAMBRIDGE ST
NEW STREET
BREWERY
HOPKINS STREET
PULTENEY COURT
HUSBAND ST
PETER STREET
MEARDS COURT
MEARDS STREET
LITTLE DEAN STREET
OLD COMPTON STREET
CHURCH STREET
KING STREET
MACCLESFIELD ST.
LITTLE WINDMILL STREET
GREAT PULTENEY STREET
BRIDLE STREET
LITTLE PULTENEY STREET
GREAT CROWN CT
UP RUPERT ST
RUPERT STREET
RICHMOND ST
ARCHER STREET
GREAT WINDMILL STREET
PRINCES STREET
GERRARD STREET
GEORGE YD
LISLE STREET
LEICESTER
GOLDEN SQUARE
UP JAMES ST
UP JOHN ST
LOW. JAMES ST.
LOWER JOHN STR
BREWER STREET
SHERRARD
WARWICK STREET
LEICESTER ST
BEAK ST.
NEW BURLINGTON STREET
NEW BURLINGTON MEWS
OLD BURLINGTON MEWS
HEDDON COURT
HEDDON STREET
SAVILLE
BOYLE ST.
MILL STREET
MILL ST
CHAPEL PLACE
FOUBERTS PL
NEW
BURLINGTON
OLD
PUMP
PUMP
PUMP
PUMP
PUMP
PUMP
PUMP
PUMP


B R O A D
PUMP
CAMBRIDGE ST


OXFORD STREET
CIRCUS
PRINCES STREET
HANOVER SQUARE
HANOVER STREET
GEORGE STREET
MADDOX STREET
ARGYLL STREET
ARGYLL PLACE
GREAT MARLBOROUGH STREET
POLAND STREET
WORK HOUSE
BROAD STREET
PORTLAND STREET
NOEL STREET
LITTLE CHAPEL STREET
CARLISLE STREET
FRITH STREET
QUEEN STREET
CHURCH ST
OLD COMPTON STREET
RICHMOND ST
RUPERT ST
GERRARD ST
LISLE STREET
LEICESTER
KING ST
GREEK STREET
RICHMOND BUILDINGS
WARWICK STREET
SAVILLE ROW
NEW BURLINGTON STREET
OLD BURLINGTON STREET
BOYLE ST
GOLDEN SQUARE
GREAT PULTENEY STREET
LITTLE PULTENEY STREET
PETER STREET
ARCHER STREET
BRUTON ST
PUMP
PUMP
PUMP
PUMP
PUMP




Bathurst
Spadina
BAY
Wellington
Richmond

Thank You!

gabby.resch@ontariotechu.ca

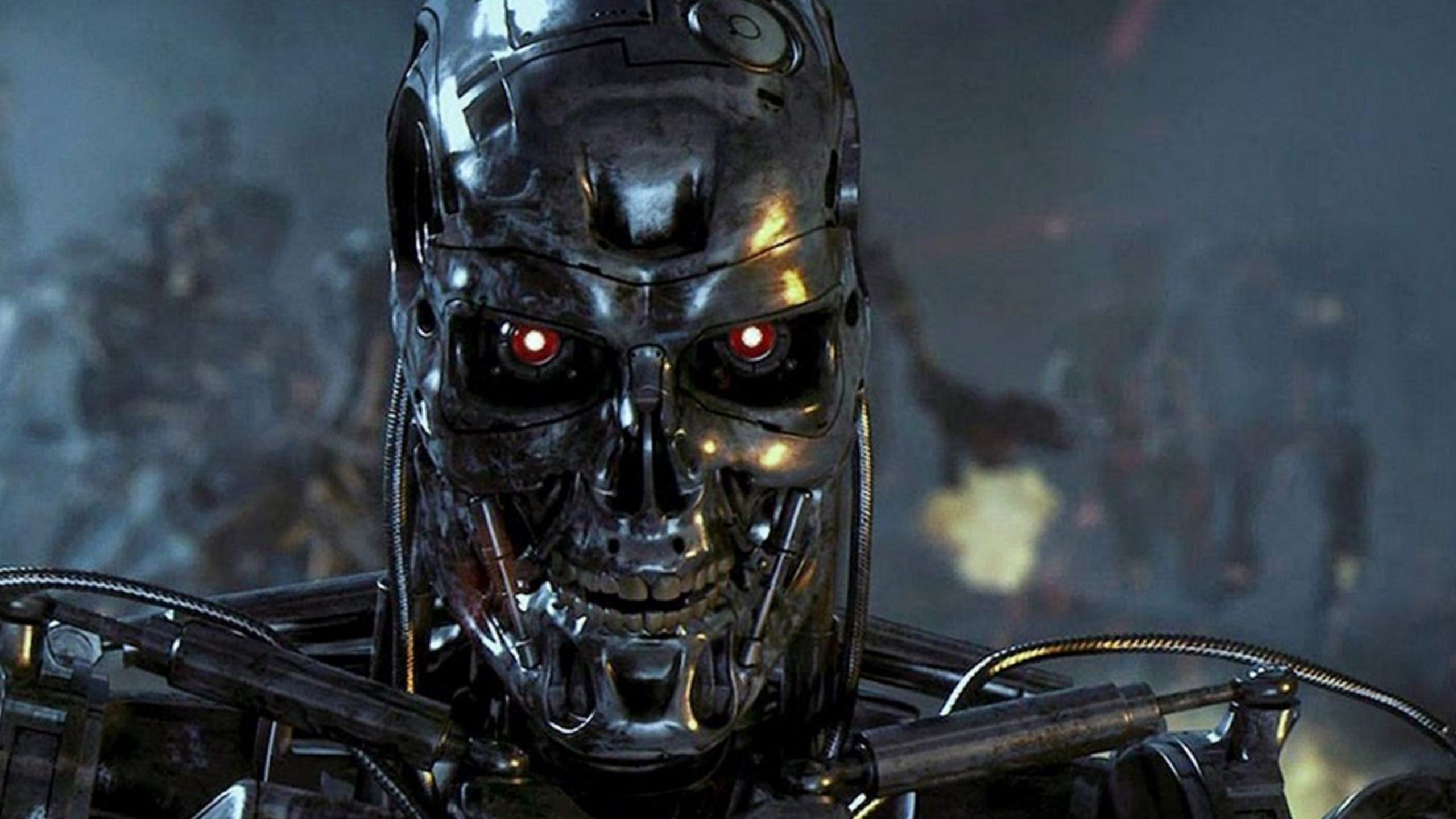
OntarioTech UNIVERSITY

Dr. Peter Lewis

Associate Professor &
Canada Research Chair in Trustworthy AI

AI or “AI”?

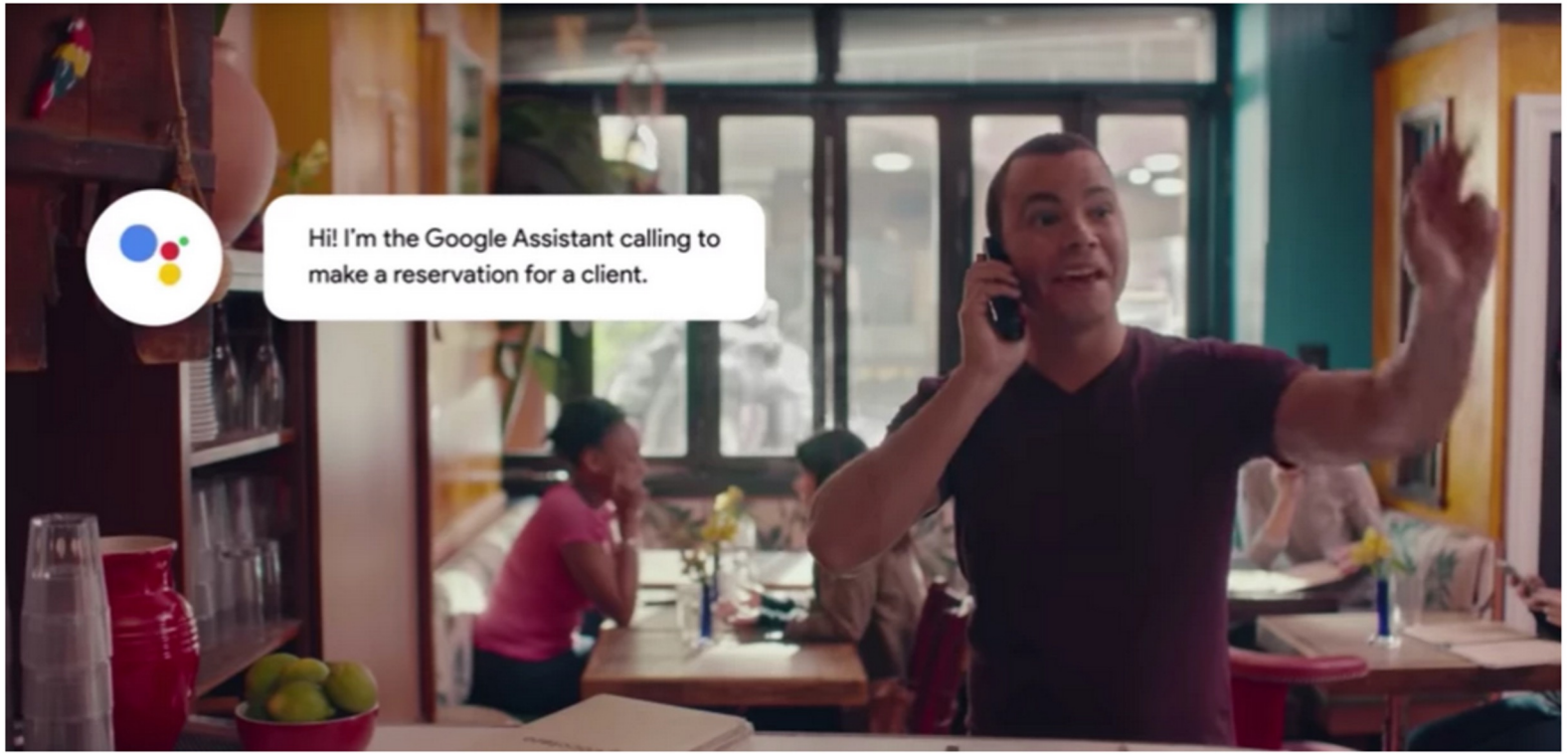
This talk is based on:
PR Lewis, S Marsh, J Pitt (2021). *AI vs “AI”: Synthetic Minds or Speech Acts.* IEEE Technology and Society Magazine 40 (2), 6-13
Available at: https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9445758



AI-powered booking service Google Duplex rolls out to iOS & Android 5.0+ devices

Sarah Perez @sarahintampa / 2 weeks ago

Comment

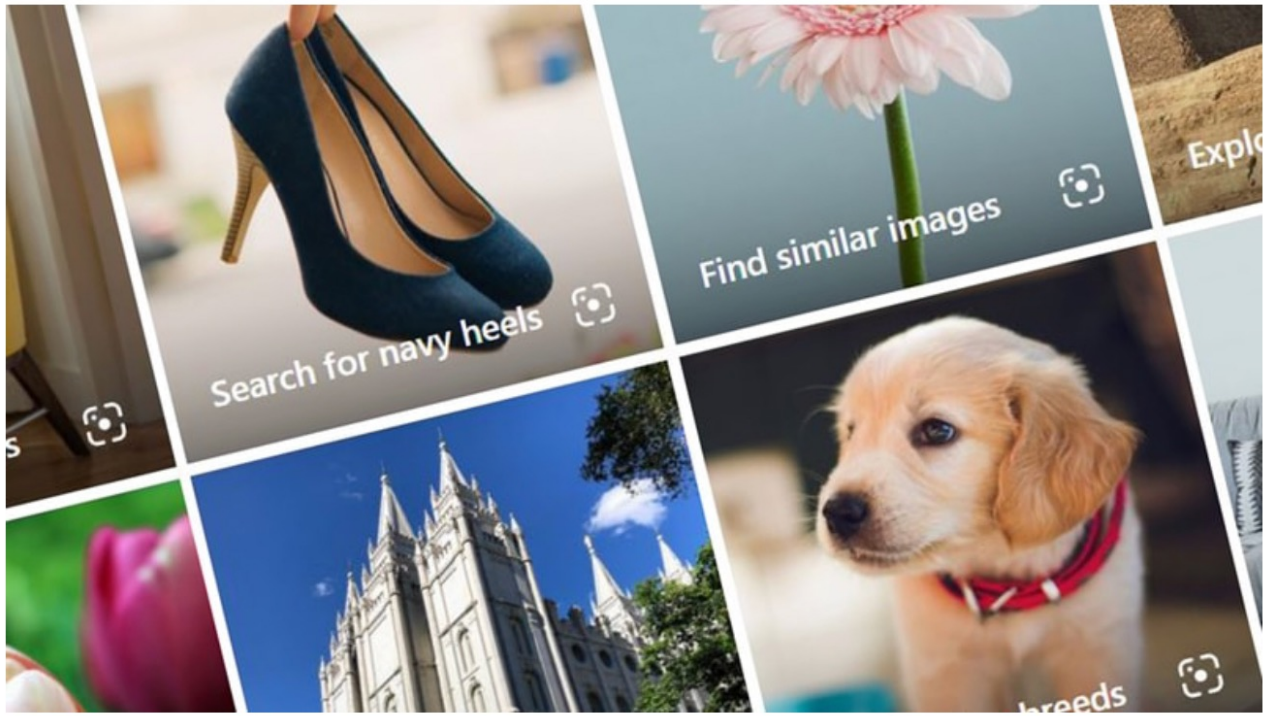


Google confirmed its Google Assistant feature for booking restaurant reservations via the phone, powered by Duplex's AI technology, has begun to roll out in English to more Android and iOS devices across the U.S. The expansion sets the stage for potential mainstream adoption — especially as it goes cross-

Intelligent search from Bing

Bing uses AI to make it even easier to find what you're looking for. With its powerful understanding of the web, Bing gives quick, well-rounded answers, even when your questions are nuanced. Bing also lets you search within an image so you can find what you see.

Try Bing > **Learn about AI at scale in Bing** >



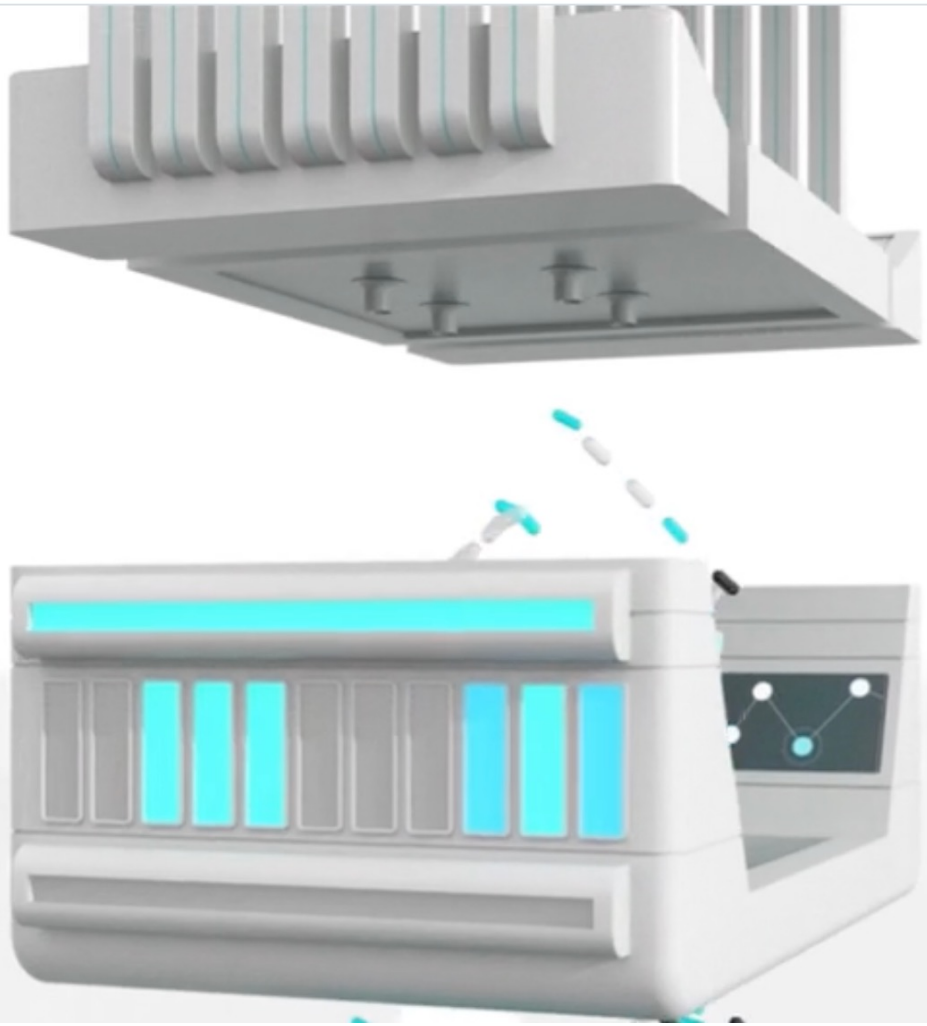
visier

Why Visier | Solutions | Platform | Customers | Resources | Company | Get a demo

AI-Powered People Analytics

Visier provides AI you can trust, lighting the way for people answers powered by predictive insights

Learn More | **Contact Us**

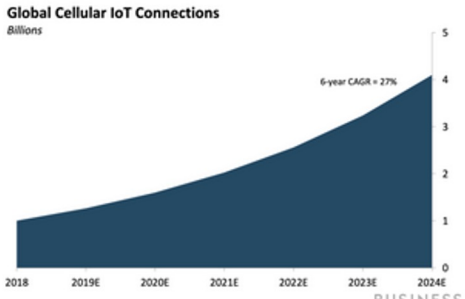


Qualcomm's new AI-powered camera design platform could popularize the use of computer vision

George Paul Apr. 11, 2019, 9:12 AM

Qualcomm released its next-generation AI-powered camera design platform using its latest purpose-built systems on a chip (SoCs) to better enable on-device machine learning and processing capabilities.

The platforms are designed for edge computing use cases that need support for video processing and analytics. The SoCs can be applied to an array of devices including smart



Capgemini

Home / Insights / Our research library / The AI-powered enterprise: Unlocking the potential of AI at…

Data and AI

THE AI-POWERED ENTERPRISE

Unlocking the potential of AI at scale

Download report
5 MB PDF

Download infographic
936 KB PDF

LATEST THINKING

OVERVIEW

AI has the potential to allow companies to not only do different things, but also to do things differently. It represents a step change in balancing growth, profitability, sustainability and trust.

With 46 percent of executives indicating that AI will drive increased revenue opportunities, getting AI right makes companies more valuable to their ecosystem and helps them maintain a competitive position in a world that will soon be powered by AI.

But to realize real and sustainable benefits, AI must evolve from being a hot new trend to a seamless enabler — woven into the fabric of the enterprise and working alongside and augmenting people.

READ THE REPORT [PDF]

84%

of organizations say AI will create new categories of products, services, business models and markets.

Your boss is watching: How AI-powered surveillance rules the workplace

Companies are buying increasingly intrusive artificial intelligence tools to keep an eye on their workers.

ARTIFICIAL INTELLIGENCE, SURVEILLANCE & PRIVACY

Privacy in the Precision Economy: The Rise of AI-Enabled Workplace Surveillance during the Pandemic

Teresa Scassa

June 8, 2021

(Shutterstock)

Barclays faces $1.1B fine over alleged monitoring of employees

Published Aug. 10, 2020

Dan Ennis
Senior Editor

Oli Scarff via Getty Images

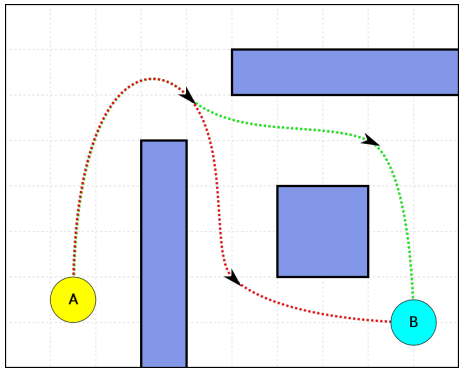
It is the use of the phrase “artificial intelligence” here that is particularly concerning.

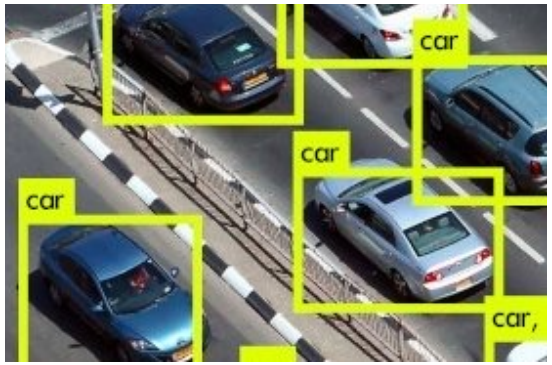
Artificial Intelligence vs “Artificial Intelligence”

- AI is a set of technologies with practical application that replicate some of things that minds can do.
- They range from simple reasoning systems…

  …through complex statistical pattern matchers and prediction machines…

  …to Turing’s *“imaginable digital computers which would do well in the imitation game”* or theoretically Haugeland’s *synthetic minds.*
- It’s also a research field that explores the how and limits of this, giving insights into the mind itself.





- “AI” is a speech act, a declaration.

  Consider the call centre scenario:

  “It is intelligent.”

  The implication is
  “we don’t trust you (as much as it)”.
- It is a social constructor, stemming from science fiction (that tends to the apocalyptic).
- It can be used to ‘dress up’ rather simple technology, to intentionally invoke preconceptions and misconceptions about what the technology is.

AI-Powered, Self-Driving Robots Are Taking On a Bigger Role at Walmart Stores

The world's largest retailer is making a growing bet on robots and artificial intelligence to gain a competitive edge.

Danny Vena (TMFLifeIsGood)
Mar 19, 2019 at 7:31AM

Competition in the retail industry has never been more cutthroat. The dawn of e-commerce has caused a paradigm shift, with traditional retailers having to change with the times or fall by the wayside.

Walmart (NYSE:WMT) is representative not only of the old guard of retail, but also of the transition that is happening among brick-and-mortar stores to adapt to this new reality. In addition to a fierce move into e-commerce, the once-stodgy retailer has embraced cutting-edge technology to help keep costs in check and provide a better shopping experience for its customers.

Case in point: Self-propelled robots are now taking on an increasing role in Walmart's operations.

This is quite a sensible application of robotics.

But if we are replacing human janitors with machines with ‘intelligence’…

…wouldn’t we normally rank trustworthiness above smarts, when hiring for these roles?

Words Matter

‘Words matter.

‘Starting today, [we] will stop using the terms “artificial intelligence,” “AI,” and “machine learning” in our work to expose and mitigate the harms of digital technologies in the lives of individuals and communities.

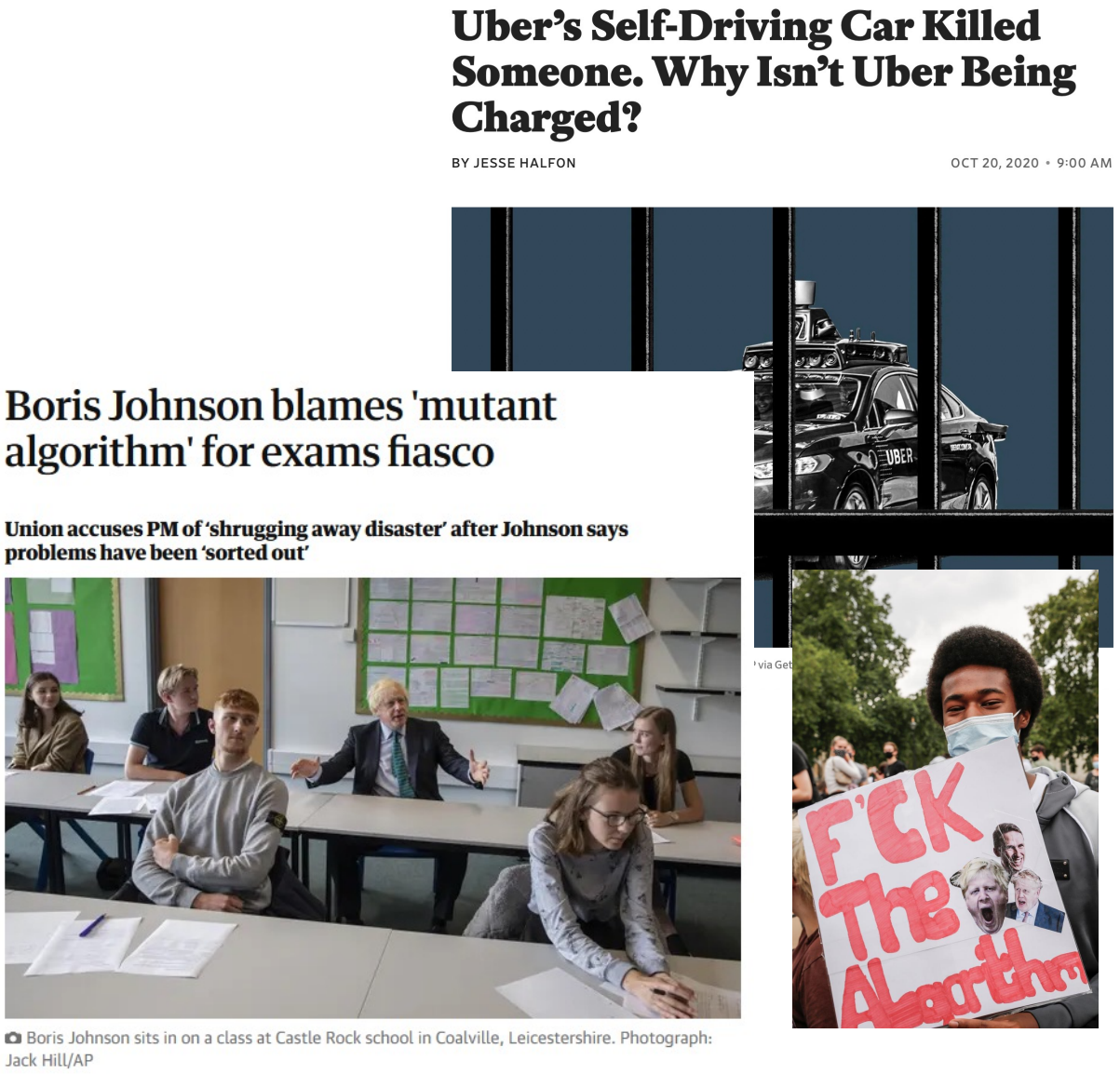
‘AI has become a phrase that now functions in the vernacular primarily to obfuscate, alienate, and glamorize.’

Emily Tucker, Executive Director

Centre on Privacy & Technology
at Georgetown Law

Why Intentionally Evoke Misconceptions?

- Those who use “AI” as marketing speak often go on to ask how they can get people to find their technology ”trustworthy”.
- The implication is that it is *beyond the control of its creators* when it leaves the shop floor.
- *‘Don’t blame us… it’s autonomous and learnt things for itself.’*
- This is an unacceptable attempt to evade responsibility by people who would rather not be held accountable.
- A claim of *“AI gone awry”* is a travesty of justice.



Uber’s Self-Driving Car Killed Someone. Why Isn’t Uber Being Charged?

BY JESSE HALFON OCT 20, 2020 • 9:00 AM

Boris Johnson blames 'mutant algorithm' for exams fiasco

Union accuses PM of ‘shrugging away disaster’ after Johnson says problems have been ‘sorted out’

Boris Johnson sits in on a class at Castle Rock school in Coalville, Leicestershire. Photograph: Jack Hill/AP

Harvard Business Review

Latest Magazine Popular Topics Podcasts Video Store The Big Idea Visual Library

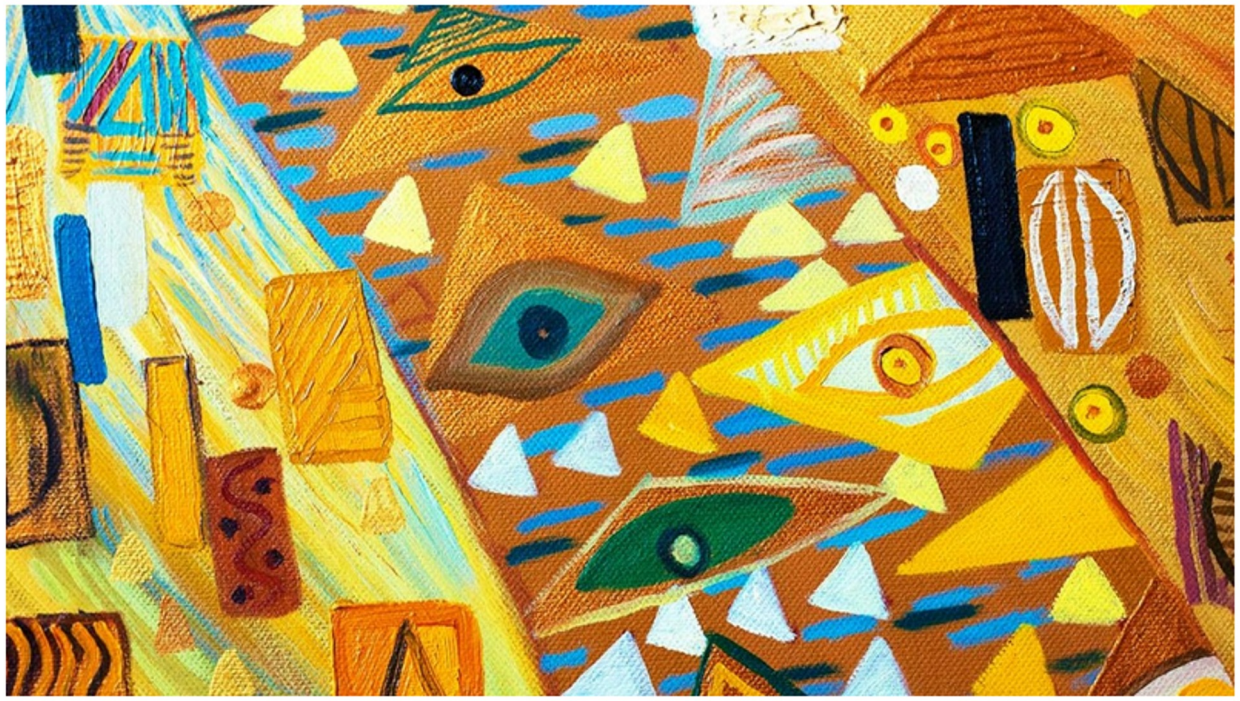
TECHNOLOGY

To Get Consumers to Trust AI, Show Them Its Benefits

by Ellen Enkel

APRIL 17, 2017

Summary Save Share 0 Comment Text Size Print $8.95 Buy Copies



'I want to trust the trustworthy and distrust the untrustworthy.'

Baroness Onora O'Neill

We need ***information***,
not ***convincing***.

Accountability Matters

The Telegraph HOME | NEWS | SPORT | BUSINESS | ALL SECTIONS

Technology Intelligence

Gadgets | Innovation | Big Tech | Start-ups | Politics of Tech | Gaming

Technology Intelligence

Microsoft's racist bot shows we must teach AI to play nice and police themselves

Follow

MADHUMITA MURGIA

29 MARCH 2016 • 3:58PM

My account

Contribute

The Guardian

News | Opinion | Sport | Culture | Lifestyle

World | UK | Science | Cities | Global development | Football | Tech | More

Amazon

Amazon ditched AI recruiting tool that favored men for technical jobs

Specialists had been building computer programs since 2014 to review résumés in an effort to automate the search process

Reuters

Thu 11 Oct 2018 00.42 BST

317

This article is over **3 months old**

Amazon's machine-learning specialists uncovered a big problem: their new recruiting engine did not like women.

The team had been building computer programs since 2014 to review job applicants' résumés, with the aim of mechanizing the search for top talent, five people familiar with the effort told

Accountability Matters

BBC Home News Sport Reel More

NEWS Menu

Tech

Alexa tells 10-year-old girl to touch live plug with penny

28 December 2021

Amazon has updated its Alexa voice assistant after it "challenged" a 10-year-old girl to touch a coin to the prongs of a half-inserted plug.

The suggestion came after the girl asked Alexa for a "challenge to do".

NewScientist

Autonomous killer drones set to be used by Turkey in Syria

TECHNOLOGY 20 September 2019

By David Hambling

The Turkish army is increasingly using drones in combat
Soner Kilinc/Anadolu Agency/Getty

Turkey is to become the first nation to use drones able to find, track and kill people without human intervention.

If “AI” is a speech act intended to help evade accountability,
at which point should it be trusted?

Too Much to Ask?

We should expect AI providers to have the means to explain:

- What the system is doing;
- Why it does what it does;
- How it does this thing;
- Why it does it this way;

…in ways that the people affected by it understand.

We may not always be in control of the AI systems we build.

But as creators, sellers, and marketers, we *are* in control of “AI”.