

# Responding to the skills-shortage in AI

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Course Director

Part-time online MSc in Artificial Intelligence

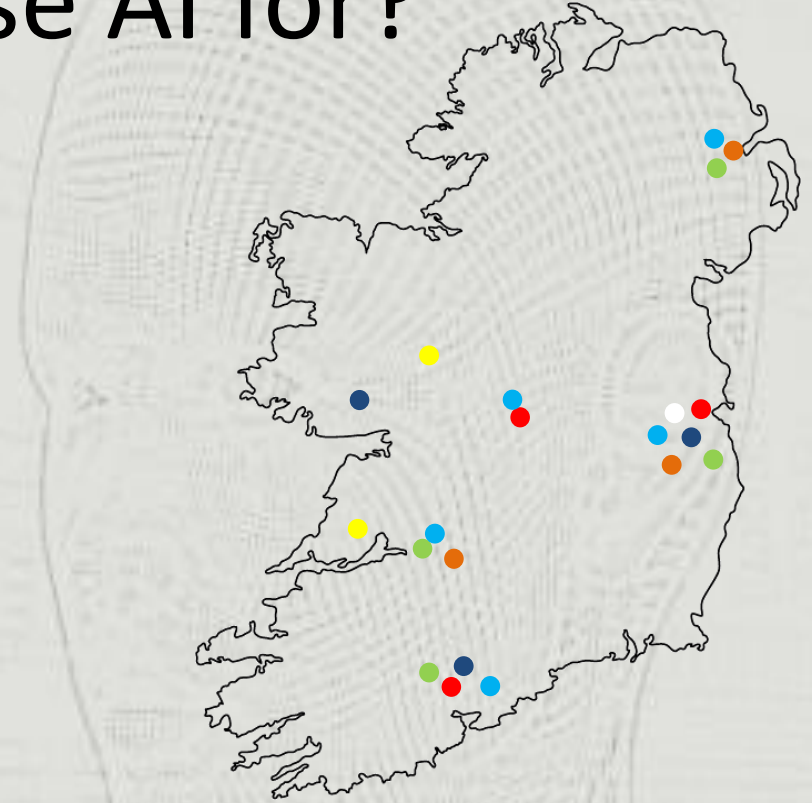
*University of Limerick*

AI Summit Dublin, March 5<sup>th</sup> 2020



# What do we use AI for?

- *Automotive*
- *ICT*
- *Manufacturing*
- *Retail / Customer support*
- *Financial services*
- *Medical / Health*
- *Entertainment*



IDA Ireland  
Ireland  
AI Island

Q4 2017

The logo for IDA Ireland's AI Island initiative, featuring a network of nodes and lines. Below the logo is a row of nine industry icons: Healthcare, Finance, Entertainment / Gaming, Technology & communication, Transportation, Pharmaceuticals, Consumer services, Agriculture, and Retail.

# The Challenge

## THE IRISH TIMES

AI won't develop itself, you know: why we need a national AI strategy

A milestone plan to shape the future direction of AI in Ireland is under way

□ Thu, Dec 5, 2019, 00:00 | Updated: Thu, Dec 5, 2019, 10:31

- *40% No immediate plan*
- *50% No clear idea of impact*
- *50% Not preparing workforce*
- *..'AI needs to be demystified and woven into the change agenda of Irish organisations.'*

# Six Priorities

Clarity: Understand AI and how it fits in your business

Strategy: Organise for return on investment

Data: Locate and label to teach machines

Skills: Build an AI-ready workforce with an agile mindset

Trust: Make AI responsible in all its dimensions

Convergence: Combine AI with analytics, the IoT and more

# What skills do we need?

- Workshop May 2017



- Tender Sept – Nov 2017



- Theoretical understanding of machine learning.
- Practical understanding of real-world problems and practices.
- Drivers of AI innovation

# Responding to these needs



## Part-time online MSc offerings ●

- CIT MSc in Artificial Intelligence
- NUIG MSc in Computer Science  
Artificial Intelligence
- DCU MSc in Computing  
Artificial Intelligence
- ITSligo MEng in Connected and  
Autonomous Vehicles
- UL MSc in Artificial Intelligence

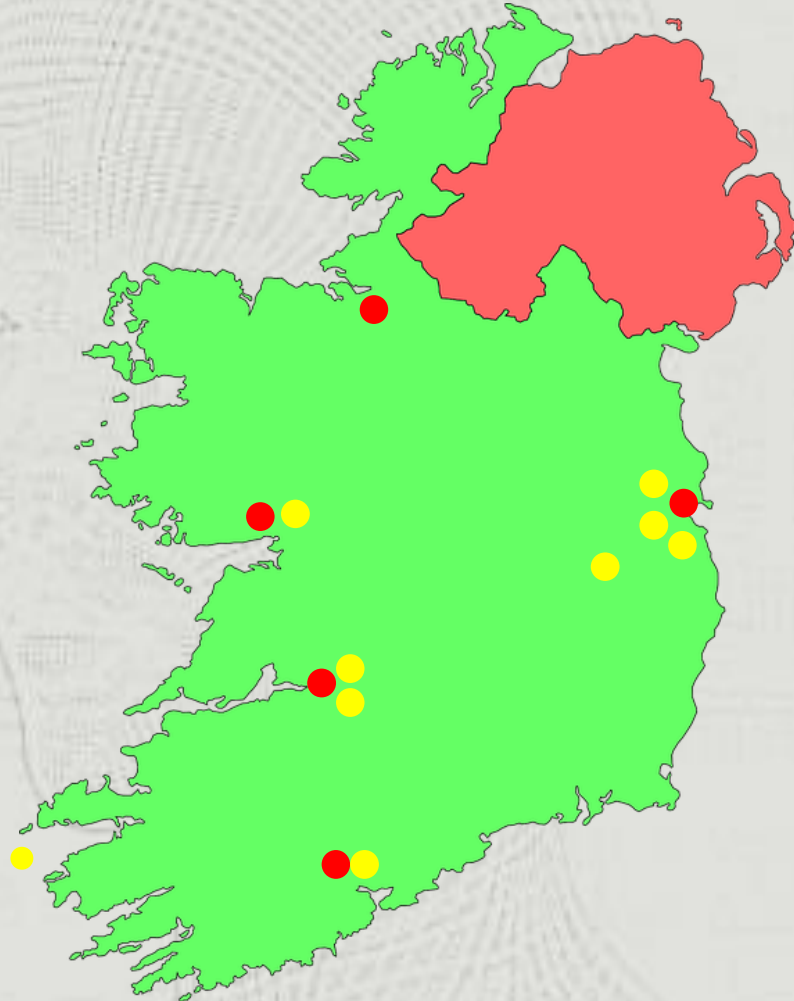
Capacity: 200 MSc students / yr



## SFI Centres for research training ●

- Foundations of Data Science
- Artificial Intelligence

Capacity: 260 PhD students (total)



# Ireland's first industry-driven MSc in AI

## Certificate in AI - *Part-time, 12 ECTS\**

Year 1 Autumn

- 1 Introduction to Scientific Computing for AI
- 2 Introduction to Deep Learning and Frameworks

## Masters in AI - *Part-time, 90 ECTS*

Year 1 Spring

- 1 Artificial Intelligence and Machine Learning
- 2 Data Analytics
- 3 Advanced Topic Seminars and Project Identification

Year 1 Summer

- 4 Research Methods and Project Specification
- 5 Risk, Ethics, Governance and Artificial Intelligence

Year 2 Autumn

- 6 Computer Vision and Pattern Recognition
- 7 Machine Learning Applications

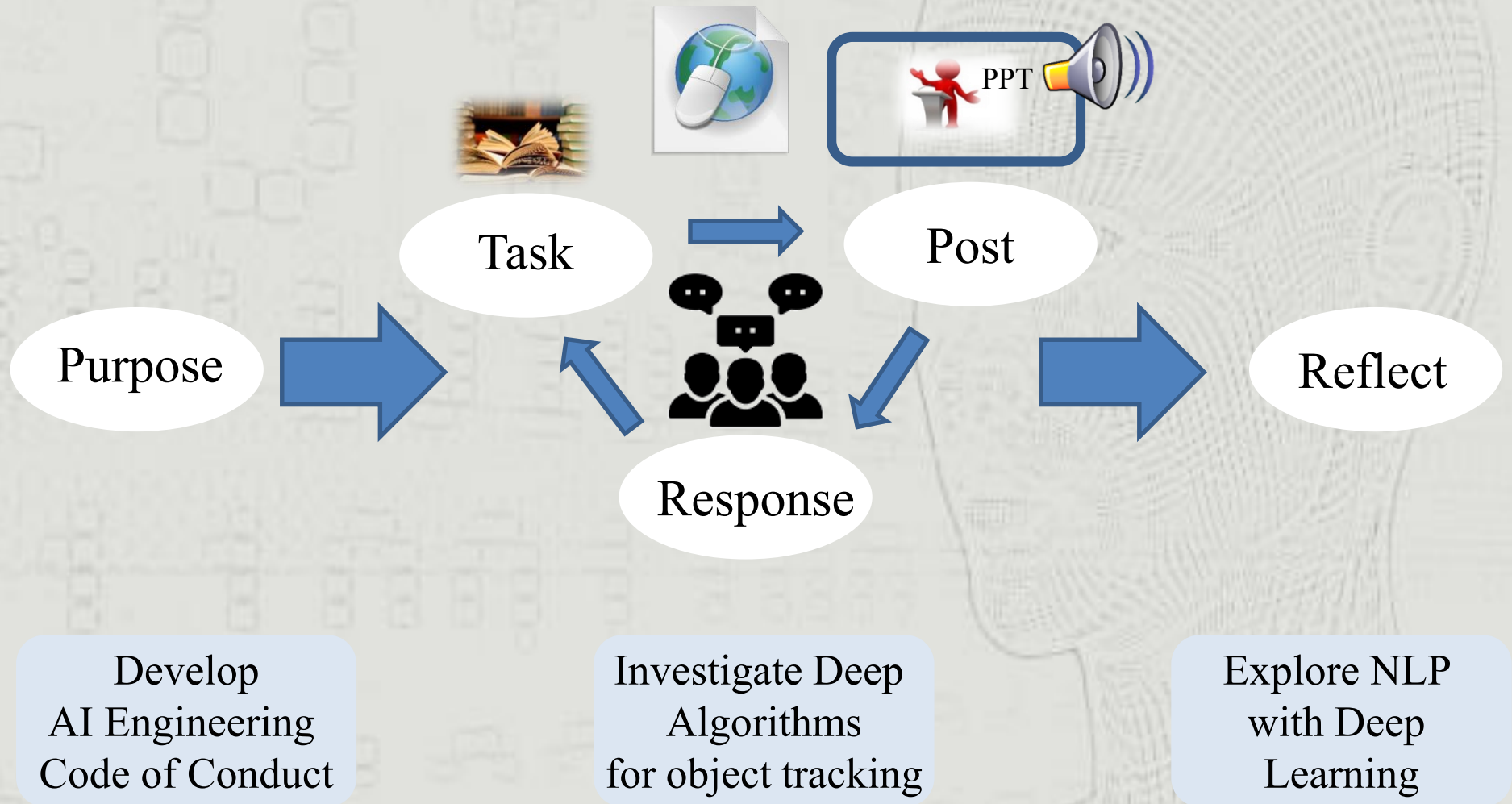
Year 2 Spring

- 8 Deep Learning
- 9 Data Science
- 10 Theory and Practice of Advanced AI Ecosystems

- 11 Project and Dissertation

\*ECTS = European Credit Transfer System (1 ECTS 15-25hrs)

# Philosophy of the Programme





# Breadth of Topics Covered

Medicine

Self-driving cars

Fairness

Federated learning

Cyber Defence

Ethics

Forecasting

Deep Learning

Brain Machine Interface

E-commerce

Robotics

Water Quality

NLP

Medical imaging

Automated labelling

Physical activity

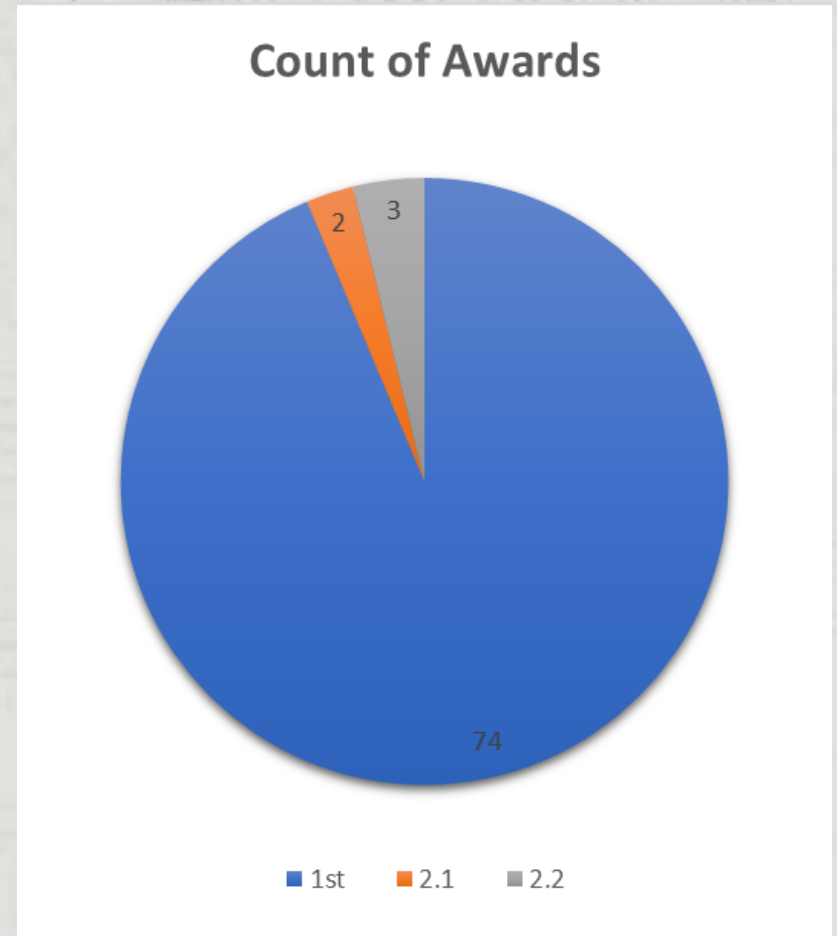
Machine Vision

# Women in AI

- 7% Female participation in UL MSc in AI
- Barriers?
- Accenture Women in Data Science Accelerator
- Bespoke Certificate in Artificial Intelligence designed specifically to support women in employment
- Part-funded by ICT Skillnet

# Academic Results to-date

- Cohort 1 (Sept. 2018)
  - 104 Certificate in AI
  - 80 MSc in AI
- Cohort 2 (Sept. 2019)
  - 74 Certificate in AI
  - 63 MSc in AI



# Student Experience to-date

*Ethics and AI Engineer code of conduct will change my personal practices*



*Responsive lecturers, promptly implementing suggestions and addressing feedback*



*Hard work but the programme lives and breaths AI*

*You are delivering the best AI Masters course in Ireland*

# Enrolment Academic Year 2020/21

Application Deadline: Wednesday, July 22, 2020

<https://www.ul.ie/gps/artificial-intelligence-msc>

<https://www.ictskillnet.ie/training/national-msc-in-artificial-intelligence-online/>

[info@ictskillnet.ie](mailto:info@ictskillnet.ie)

Related programmes starting in UL Sept 2020:

1. Part-time MSc in Machine Learning for Finance
2. Full-time MSc in Artificial Intelligence

# Acknowledgements

- Thank you for listening!
- Students on the programme
- Industry board
- MSc Development team headed up by Prof. Nelson
- Our partners:



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