F90AM Advanced Machine Learning

COURSE DETAILS
Course Code: F90AM
Full Course Title: Advanced Machine Learning
SCQF Level: 10
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes
Postgraduate Taught: No
Postgraduate Research: No
Additional Information:

COURSE AIMS
To introduce students to advanced concepts and methods in machine learning.
To provide students with expertise in key areas of application of machine learning in research or industry.

LEARNING OUTCOMES – SUBJECT MASTERY
On completion of this module, students should be able to:
Read and understand the current machine learning literature related to the selected topics.
Demonstrate expertise in applying recently acquired knowledge to practical data analysis problems.
Discuss machine learning concepts and their potential applicability with peers and in a professional setting.

LEARNING OUTCOMES – PERSONAL ABILITIES
At the end of this module, students should be able to:
Demonstrate the ability to learn independently
Manage time work to deadlines and prioritise workloads
Summarise and explain in writing an important new development in machine learning and understand its practical implications for the professional practice of data science.
Present results orally in a way which demonstrates that they have understood the technical and broader issues related to the special topic.
Have awareness of the applications of the new methodology in research and industrial applications.

SYLLABUS
This course will present some state-of-the-art machine learning concepts and methodologies, which will be selected each year by the course leader:

Topics could include, for example, recent developments in Deep Learning, Reinforcement Learning, and Bayesian Methods in Machine Learning. There will be a strong focus on the application of the involved theory, methods, algorithms to real data analysis problems by using state-of-the-art software tools.

The studied machine learning techniques will be demonstrated with a range of applications related to science and industry, such as computer vision, medical imaging, and natural language processing.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Level</th>
<th>Title</th>
<th>School</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>F20ML</td>
<td>10</td>
<td>Statistical Machine Learning</td>
<td>School of Math and Comp Sci.</td>
<td>Pre-Requisite</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location and Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edi</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>Y</td>
</tr>
</tbody>
</table>

Page 2 of 2