

# ADAPT Undergraduate Internship Programme 2017

## PROJECT DESCRIPTION

<b>Institution/Team:</b>	ADAPT/Theme B	
<b>Project Title:</b>	Image Caption Generation	
<b>Suitable for students who are studying in the following areas:</b>	Computer science with strong programming skills.	
<b>Skills needed:</b>	A good programming skills. Familiar with machine learning , computer vision and natural language processing.	
<b>Project Description:</b>	<p>In a recent scene shift, the Social Media era has thrown up a multitude of tasks in which vision and language are inherently linked.</p> <p>Most businesses operating across international borders understand the value of multimodal user-generated content. In order to make a connection, they have to be able to speak the language of their customers and understand their needs. Websites, marketing materials, social media profiles and other high-impact elements in different modalities should all be thoroughly localized, which can mean a combination of high-quality language processing, analytics and computer vision.</p> <p>Inspired by recent work in multimodal natural language processing such as the Multimodal Machine Translation, the caption generation models become a strong technique to capture and determine objects in the images and express their relationships in natural language.</p> <p>In the context we propose an internship on generating sentences that describe a given image crowdled from Social Media. The baseline system for this task will be the image description model by Xu et al. (2015).</p>	
<b>The Role of the student &amp; benefits gained from participation in this project:<sup>1</sup></b>	The student will learn how to use existing caption generation tools (Xu et al. 2015) and implement some new features that improve the results of the project.	
<b>Who will be working with you?</b>	Our undergraduate student will be working closely with Dr. Haithem Afli and Dr. Jinhua Du. The student will participate in all our project meetings during his/her time with us.	
<b>Short description of the group:</b>	The ADAPT Theme B group, led by Prof. Andy Way ( <a href="mailto:andy.way@adaptcentre.ie">andy.way@adaptcentre.ie</a> ), is one of the leading MT groups on a global basis.	
<b>Recommended Reading Material:</b>	<p>[1] Rami Al-Rfou' et al. Theano: A Python framework for fast computation of mathematical expressions. CoRR abs/1605.02688 (2016)</p> <p>[2] Kelvin Xu, Jimmy Ba, Ryan Kiros, Kyunghyun Cho, Aaron C. Courville, Ruslan Salakhutdinov, Richard S. Zemel, Yoshua Bengio: Show, Attend and Tell: Neural Image Caption Generation with Visual Attention. CoRR abs/1502.03044 (2015)</p> <p>[3] Mark Marsden et al. Dublin City University and Partners' Participation in the INS and VTT Tracks at TRECVID 2016. In: TRECVID Conference, 14-16 Nov 2016, Gaithersburg, Md., USA.</p>	
<b>Other information:</b>		
<b>For further details on this project please contact:</b>	<b>Name:</b> <b>Phone:</b> <b>E-Mail:</b> <b>Website:</b>	<b>Dr. Haithem Afli, Dr. Jinhua Du</b> 1 700 6711 <a href="mailto:haithem.afli@adaptcentre.ie">haithem.afli@adaptcentre.ie</a> , <a href="mailto:jinhua.du@adaptcentre.ie">jinhua.du@adaptcentre.ie</a>

<sup>1</sup> This is an initial description of the role of the student and it is liable to change following discussions with the investigators.