

### Information on Postgraduate Research Scholarship - Ref: VCS-BUS-01-17

**Faculty:** Business      **Department:** International Business and Economics

**Lead Supervisor:** Dr. Nicola Perra

**Project Title:** Understanding contagion spreading processes of cyber security threats through social networks

**Project Description:**

The spreading on ideas, memes, norms, products, and diseases are few examples of phenomena that can be studied and modelled as contagion processes on networks. Surprisingly, the dynamics of contagion in terms of semantic social engineering threats, such as phishing, scams, drive-by-malware etc. have received so far little attention. Indeed, although their spreading is conducted primarily in online social networks, studies in cyber security have been focused mainly on defining the characteristics (features) of threats and users that are more likely to result in successful attacks. In other words, the *complexity* emerging from the unsupervised interactions and actions of large number of users as well as threats strategies have been largely neglected.

The project will tackle this limitation head-on. By mixing approaches from cyber security, network and data science the project aims at characterising the mechanisms and the phenomenology behind the spreading of cyber threats on social networks.

The PhD student will be co-supervised by Dr. Loukas (Faculty of Architecture Computing and Humanities) and Prof. Yamir Moreno (University of Zaragoza, Spain).

**Duration:** 3 years, Full-Time Study

**Bursary available (subject to satisfactory performance):**

Year 1: £14,553      Year 2: In line with RCUK rate      Year 3: In line with RCUK rate

In addition, the successful candidate will receive a contribution to tuition fees equivalent to the university's Home/EU rate, currently £4,195, for the duration of their scholarship. International applicants will need to pay the remainder tuition fee, currently £8,305, for the duration of their scholarship. This fee is subject to an annual increase.

<b>Person Specification of Essential (E) or Desirable (D) requirements:</b>	
<b>Criteria:</b>	<b>E or D</b>
<b>Education and Training:</b>	
<ul style="list-style-type: none"> <li>1<sup>st</sup> Class in an undergraduate or Master's degree in a related discipline (incl. computer science, statistics, physics, mathematics etc.)</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, unless the degree above was taught in English <b>and</b> obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA.</li> </ul>	<b>E</b>
<b>Experience &amp; Skills:</b>	
<ul style="list-style-type: none"> <li>Previous experience of undertaking research (e.g. as evidenced by a research publication or by a 1<sup>st</sup> class mark in undergraduate or taught Master's dissertation)</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>Experience with programming languages (e.g. python, c++, or similar)</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>High proficiency in mathematics and quantitative methods</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>Master's in computer science, physics, mathematics, or statistics</li> </ul>	<b>D</b>
<ul style="list-style-type: none"> <li>Proficiency in data science</li> </ul>	<b>D</b>
<ul style="list-style-type: none"> <li>Experience in cyber security or cyber crime through studies/research</li> </ul>	<b>D</b>
<b>Personal Attributes:</b>	
<ul style="list-style-type: none"> <li>Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>Able to, under guidance, complete independent work successfully and within strict deadlines</li> </ul>	<b>E</b>
<b>Other Requirements:</b>	
<ul style="list-style-type: none"> <li>This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>A PhD project research proposal that is related to the research area</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>The scholarship must commence before 30 November 2017</li> </ul>	<b>E</b>

Contact details: Dr. Nicola Perra

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Closing Date: **midnight (UTC) on 11 August 2017**

#### **Making an application:**

Please read this information before making an application. Information on the application process is available at: [http://www2.gre.ac.uk/research/study/apply/application\\_process](http://www2.gre.ac.uk/research/study/apply/application_process). Applications need to be made online via this link. **No other form of application will be considered.**

All applications **must include** the following information. **Applications not containing these documents will not be considered.**

- **Scholarship Reference Number (Ref: VCS-BUS-01-17)**– included in the personal statement section together with your personal statement as to why you are applying
- **a research proposal related to the subject topic \***
- **a CV including 2 referees \***
- **academic qualification certificates/transcripts and IELTS/English Language certificate if you are an international applicant or if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency \***

*\*upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application you are encouraged to liaise with the Lead Supervisor on the details above.