PhD Seminar Announcement

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BOTs or not? A case study on bot recognition from web session logs

19 Apr. 2018, 2:30 pm
Conference room, 3rd floor

Abstract: A significant problem nowadays is detection of Web traffic generated by automatic software agents (aka Web bots). Some studies have dealt with this task by proposing various approaches to Web traffic classification in order to distinguish the traffic stemming from human users’ visits from that generated by bots. Most of previous works addressed the problem of offline bot recognition, based on available information on user sessions completed on a Web server. Very few approaches, however, have been proposed to recognize bots online, before the session completes. Two novel approaches are proposed for binary classification of a multivariate data stream incoming on a Web server, in order to recognize ongoing user sessions as generated by bots or humans. These approaches use deep neural networks combined with two alternative decision modules to express the relationship between subsequent HTTP requests in an ongoing session and to assess the likelihood of each session being generated by a bot or human before it ends. Experimental results showed the ability of the proposed approaches to detect Web bots online, with high performance scores and a small number of false negatives, as evidenced by the Recall index, minimizing the impact on human visitors. Another valuable indicator is the speed of decision: the proposed methods allows very quick classification of nearly all sessions, leaving only very few of them undecided.

Short bio: Alberto is a second-year PhD Student in Computer Science and Systems Engineering at DIBRIS, University of Genoa (Italy). He is an Electronic Engineering and a professional engineer. Presently tenured teacher of ICT at Public Secondary Schools and co-founder of Vega Research Laboratories s.r.l.s, an innovative startup company, has formerly covered positions as CEO of Flashover Time s.r.l, Deputy Division Director in Computer Science Corporation, Project Manager in Marconi Communications.