

February 27, 2017

To whom it may concern

**Letter of recommendation for Mr. Chen Zhuge**

In fall semester of 2015, Chen attended my course “Cyber Defense Monitoring Solutions” in Tallinn University of Technology, Estonia. Also, I acted as a supervisor for Chen’s master’s thesis in spring semester of 2016.

While attending my course, Chen was the best student of the class, collecting the highest possible score for all homeworks and the examination work. Chen participated actively in lectures and labs, initiating many detailed discussions on intrusion detection, event log collection, event correlation, and other security monitoring topics.

Chen’s master’s thesis was focused on data clustering for event logs, and the main contribution of his thesis was the development of an open-source C-based implementation of the LogCluster algorithm (<https://zhugehq.github.io/logclusterc/>). Within just 6 weeks, Chen managed to complete a 6000 line implementation in C which was fully functional. His thesis also provided a detailed overview of related work on event log clustering, demonstrating his deep knowledge on pattern mining algorithms for event logs. Chen defended his thesis successfully and was awarded with the highest degree 5 (“A” or “excellent”) by the thesis committee. Because of the highly successful thesis defense and excellent results throughout his studies (average grade higher than 4.6), Tallinn University of Technology awarded Chen the MSc degree with *cum laude*.

Since Chen was one of the best students in cyber security MSc program and demonstrated significant abilities for both academic and industrial research, I am confident to recommend Chen for a researcher or security expert position in industry, or a PhD student position in academia.

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