

Final Report

Name of BritInn Fellow: Daniel Woods

Home Department: Computer Science

Home University: University of Oxford

Guest Department: Computer Science

Guest University: University of Innsbruck

From: 24/6/2019

Until: 30/6/2019

Title of the Research Project: Inferring Loss Distributions from Insurance Prices

Report about visit and future plans

Mr. Daniel William Woods from the Department of Computer Science at the University of Oxford was a guest at the University of Innsbruck in June 2019. He was invited by Prof. Rainer Böhme from the Institute of Computer Science at the University of Innsbruck. His visit centered on drafting a Marie-Curie Individual Fellowship application.

The project Mr. Woods is working on with his colleagues from Innsbruck, aims to improve on a novel method to infer loss distributions for cyber events from cyber risk insurance premiums. In particular, they seek to experiment with more flexible distributions to reduce prediction errors and see how the impacts the inferred distribution. These inferred distributions could be used by risk managers to understand risk exposure. Such estimates are much demanded in the field of cybersecurity because uncertainty is high and data about losses is scarce.

The BritInn guest lecture on this topic took place on Thursday, 27 June 2019, with the title “The County Fair Cyber Loss Distribution: Drawing Inferences from Insurance Prices”.

The project proposal went through a lot of iteration over the short stay; it was much more efficient than an email exchange. Discussions with Dr. Cecilia Pasquini sparked the idea of applying adversarial machine learning to the problem.

The visit of Mr. Woods helped to identify which research directions are most fruitful for the Lise-Meitner grant application and moreover, with the application being currently finalized, Mr. Woods is planning on joining Prof. Böhme’s research group in September 2019.

On the final day of his stay in Innsbruck, Prof. Rainer Böhme took Mr. Woods on a hiking trip. Hiking at 2000m with snow fields, avalanches, and many other things which can't be found in the UK, was truly an experience.



Picture Credits: Daniel Woods and Rainer Böhme

