Student Led Data Recovery Services

Providing Digital Forensics students with relevant work experience

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Abstract— Digital Forensics is a growth market; however, obtaining real world work experience as a student can be challenging due to the high levels of competition, legal, ethical, and confidential aspects of the work. This paper presents a solution to providing students practical work experience that will aid them in obtaining future employment in Forensics. Currently under development at Leeds Beckett University is a student led data recovery service, which will be provided to all staff and students, using mixed level groupings of students. This service is designed to provide a rich, interactive environment that enables students to gain hands-on experience in an unknown and dynamically changing environment. Plans have received positive support from both Faculty Leadership and students. The service is due to start in September 2016.

Keywords—digital forensics education; data recovery; work experience; learning environments; PBL.

I. INTRODUCTION

Leeds Beckett University currently offers both Undergraduate and Postgraduate awards in Computer Forensics (and variants with Security) these awards develop students to become proficient forensic examiners. One key area of such a role is the ability to recover data from a variety of digital devices [1]. Students currently undertake, through their studies, a high percentage of practical work based on material generated by tutors: this includes the preparation, recovery and presentation of data. It would be beneficial for the students to have more "unknown" data experience – where the results are not pre-prescribed and failures are as common as success – reflecting real world practice.

Data recovery can be thought of, broadly, as split into two areas:

1. Physical data recovery: This type of service is utilised when there is physical damage to a device – such as a dropped hard drive or a USB drive that was immersed in water. This service requires specialist facilities such as clean rooms and hardware. This service is beyond the scope of most and is typically only undertaken by professionals in the field. The data will be recovered to another device and returned to the "customer", along with their original device.

2. Logical data recovery: This type of service is more common and is requested when someone has accidentally deleted a file or folder on their computer or USB device, or data is corrupt thus the file is no longer accessible. This service is an aspect of Computer Forensics. No hardware modifications are made to the device, simply access and recovery of the data is performed – nothing on the device is altered. The data will be recovered to another device and returned to the "customer", along with their original device.

It would not be legal or ethical for students to work in a forensic capacity as they are not fully trained; therefore not ready for presenting evidence as an "Expert". However, students do have the abilities and skills to offer logical data recovery services.

II. AIM

Our aim is to develop a student led logical data recovery service available to all staff and students at minimum cost: estimated £5 plus the cost of media. This service will be managed by a forensics lecturer (at inception at the least) or a delegated individual with the work undertaken by second and third year forensic students under supervised conditions. It is the intention that students will be divided up into "teams" so that the work can be evenly managed and any issues relating to poor communication, illness or lack of attendance can be mitigated as a member of the team should always be available. This is a form of Problem-Based Learning (PBL), in which students will work together in groups to work solutions with the tutor as a facilitator [2].

The ability for the service to become ingrained and utilised within Leeds Beckett will act as a test bed for future externally marketable products.

Through offering such a service it is predicted that the following benefits will be gained:

1. Communication: Students will learn to communicate effectively and professionally with customers both verbally and written (through email, face-to-face meetings and via phone); making them more comfortable in communicating with clients and others – in particular presenting findings in layman's terms. As the students will be working in "teams" they will also learn to develop their peer communication and team management skills.

2. Time management: Students will learn to manage both their study and this service, allowing them to develop their own time management abilities. Support will be provided to help schedules to be developed and managed.

3. Professional/Work Experience: The service itself will be professionally managed therefore students will gain valuable work experience in the field in which they are studying. This experience is equivalent to working in a data recovery or forensic organisation; therefore the work will help to increase the profile of the students involved.

Each of these elements are sought after by employers and are in-line with the University's Graduate Attributes – in particular Enterprise.

III. METHODS

Physical data recovery would require additional resources and skills, which although would be a relatively unique service for a university (and students) to offer, it would not be cost or physical resource efficient. The development of a logical data recovery service would not require any further equipment to be purchased as all of the resources, for the majority of work, are available as part of the Computer Forensic provisions Leeds Beckett already has.

The cost requirement of any new media to place recovered data on will be the responsibility of the client who would be required to supply suitably sized media upon completion of the data recovery process.

IV. CONCLUSION

The service is in the final planning stages and numerous students have already come forward to express their interest. Through the use of peer mentoring, students will learn to communicate and work effectively as a team and will gain valuable hands-on experience in a field that can invariably be hard to enter.

V. REFERENCES

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