Helen Harman
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I am currently seeking volunteering opportunities and would like to become involved in helping organise conferences and workshops. After my PhD (due to finish September 2020), I would like to continue pursing a career in research.

Key Achievements and Skills

- Throughout my PhD studies at Ghent University I improved my skills in **technical paper writing** and **presenting**. My researched focused on developing **symbolic AI** methods for goal recognition design (GRD), action prediction and adaptive robot task planning. (See my list of publications for details.)
- At Aberystwyth University my MEng dissertation, entitled "Artificial Immune System (AIS) for Detecting and Tracking objects in Real-Time", allowed me to gain experience of working on an **individual research project**. Through this I gained knowledge of computer vision and AI concepts.
- During my time at both Ghent University and Aberystwyth University I gained **teaching experience**. For a System Design masters course, I assisted with practical sessions, which including writing worksheets; and wrote and marked the practical exam.
- While at **CERN** I worked on the testing and quality assurance of control system software. This involved running nightly graphical user interface tests; developing an automated static code analysis tool and a unit testing framework. I developed these using Python, Java and proprietary programming language called CTRL.
- I have experience in a **wide range of programming languages**, frameworks and development tools. This includes knowledge of C++, Python, Java, C, ROS, PDDL, Docker and Git.
- I have exceptional **organisational and leadership skills** gained through starting up and running the Aberystwyth University **BCS Student Chapter** and **Computer Science Society**. I was also a member of the **BCS Mid-Wales committee**. Through these groups, I organise events and encourage other students to get involved in computer science outside of their course. I work well as part of a **team** and have shown this by being part of the **Robotics Society**.
- During college I was the student council president and a governor. I helped to organise charity events, listened to what different students wanted and communicated these to the appropriate staff. This helped to develop my organisational skills and my communication skills. I also received the **Outstanding Contribution to the College/Community Award 2011**.

Education

(2016 - 2020) Ghent University:

Doctor of Information Engineering Technology. *Funding*: FWO SB grant
Extracurricular courses: Low Countries Studies (course on the history of Belgium and the Netherlands); Dutch language course - A1

(2019) Radboud University - 1 week Summer School:

Quantum in the Summer: An Introduction to the Theory and Practice of Quantum Technologies

(2011 - 2016) Aberystwyth University:

M.Eng. Software Engineering : 1st

(2009 - 2011) Birkenhead 6th form College:

A-Levels : Double Award ICT: BB, Computing: B, AS-Levels: Physics: D

(2004 - 2009) South Wirral High School:

GCSE: 10(A-C). Mathematics : A, Science: AB, Double Award ICT: Distinction
Free Standing Mathematical Qualification (FSMQ): Additional Mathematics: D

Publications

- Harman, H. & Simoens, P. (2019). Action Graphs for Performing Goal Recognition Design on Human-Inhabited Environments. Sensors 19, 2741. [PDF]
- Harman, H. & Simoens, P. (2019). Solving navigation-based goal recognition design problems with action graphs. In Plan Activity Intention Recognition (PAIR) workshop part of AAAI-19. [PDF]
- Harman, H., Chintamani, K., & Simoens, P. (2018). Action trees for scalable goal recognition in robotic applications. In the 6th workshop on Planning and Robotics (PlanRob) part of ICAPS,(pp. 90-94). [PDF]
- Harman, H., Chintamani, K., & Simoens, P. (2017). Architecture for incorporating Internet-of-Things sensors and actuators into robot task planning in dynamic environments. In Robotics and Intelligent Sensors (IRIS), 2017 IEEE International Symposium on (pp. 13-18). IEEE. [PDF]

Employment

(09/2014 - 07/2016) and (10/2012 - 06/2013) Aberystwyth University : Advisor, Demonstrator and Ambassador (Part-time)

During advisory students could ask me any technical questions they have in relation to their course. During demonstrating it was my responsibility to check through and sign-off worksheets students complete. I had to think quickly when solving their coding problems; and be able to explain different aspects of software development at the correct level of understanding. I have demonstrated in the following areas : Arduino, Robotics, C, Haskell and Java. As an ambassador I showed prospective students around and told them about the University; I had to communicate the relevant information to parents and students.

(07/2015 - 09/2015) Johannes Gutenberg University Mainz : Summer Intern

I created a Java interface for Scavenger : a tool for computing sub-algorithms in parallel and sharing the results with dependent sub-algorithms. I built a package for Weka that allows Weka's cross fold validation to make use of Scavenger. I also wrote a generic hierarchical clustering algorithm to show the befits of using Scavenger.

(07/2013 - 06/2014) CERN : Technical Student

I worked in the EN-ICE-SCD section, which provides control system software and support to different experiments. This software makes use of WinCC-OA. I ran nightly graphical user interface tests; develop an automated static code analysis tool and a unit testing framework.

Interests

I enjoy going on short hikes and exploring new places. I have recently started contributing photographs of the places I visit to Google maps; photos can also been found on my website. I have visited Oberstdorf, the Matterhorn and the Swiss Alps. While living in France I often went on bike rides and walks around Mont Jura. While at Aberystwyth I have walked up many of the local hills. I also enjoy space science and have visited ESA ESTEC, Speyer Technik Museum and National Space Centre (Leicester).

During my first year at University I was involved in setting up a robotics society. We worked on creating an autonomous sailing boat and turning remote controlled car into one controlled by different devices. During third year I set up the Aberystwyth BCS Student chapter and Computer Science Society. In the future would like to get involved in organising events, workshops and conferences.