

Report on Study and Development Fellowship for Sessional Lecturers Fellowship Summary 2016

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Department/School: School of Computer Science and School of Engineering

College: College of Physical & Engineering Science (CPES)

I was awarded a Study and Development Fellowship for Sessional Lecturers in 2016. The activities conducted during the Fellowship period is reported below.

1. Research Activities

During the Fellowship period, I worked on a research project “Feasibility Survey of Monitoring City Flooding Condition Using Unmanned Drones” in collaboration with Prof. Jizhou Lai, College of Automation, Nanjing University of Aeronautics and Astronautics (NUAA), Prof. Edward McBean, School of Engineering, Prof. Yang Xiang, School of Computer Science, MSc student Benjamin Baird, and undergraduate student Albert Jiang, University of Guelph. The project is multidisciplinary and involved aviation, computer science, and water resources. The research results have been presented as a poster (Appendix 1) in the 30th International Conference of the Florida Artificial Intelligence Research Society (FLAIRS) in May 22, 2017. The poster is well received at the conference. Many participants showed great interest in this work and asked questions. After the poster section, I also received emails from some participants. The following is one of them.

From: Stelios Kapetanakis <S.Kapetanakis@brighton.ac.uk>
Sent: Monday, May 22, 2017 11:53 PM
To: Zoe Zhu
Subject: Flairs poster session

Dear Zoe,

This is Stelios from the Flairs poster session. Thank you so much for the presentation today. I was fascinated with the work you do and I would be very interested to know more about it.

Best regards

Stelios
Dr. Stelios Kapetanakis
Principal Lecturer in Business Intelligence and Enterprise
Director, Knowledge Engineering Group
University of Brighton

Besides the FLAIRS conference poster, we have also submitted this work as a journal article, currently under peer review by the Journal of Water Management Modeling (JWMM) (Appendix 2).

2. International Collaboration on Education

During the fellowship period, I served on the International Programs Committee, School of Computer Science (SoCS). I acted as the ambassador of SoCS and visited the Nanjing University of Aeronautics and Astronautics (NUAA) (Appendix 3). With the support of the Director of SoCS, Pascal Matsakis, I presented to NUAA the SOCS faculties and research programs (Appendix 4), undergraduate programs (Appendix 5), and graduate programs (Appendix 6 and 7). NUAA expressed strong interest in future collaboration with the University of Guelph and in signing a university-level agreement. Potential collaborations under consideration include student exchange, faculty exchange, and research. As a start, they asked me to bring back information on their Summer Lecture Program (Appendix 8). They intend to give high priority to applications of U of G faculty members for the Program. The potentials to co-supervise graduate students as Chinese government scholarship holders were also discussed. I have made a report after completing the NUAA visit to the Chair of International Programs Committee at SOCS for following-up.

3. Development on Teaching

Through the fellowship, I have updated CIS1000DE which I regularly teach at Guelph. As an administrative update, I have rewritten the course description to better articulate the learning outcomes, which has been submitted to Prof. Judi McCuaig, Associate Director, SoCS, for approval.

One innovation to the course is a new assignment that develops a website on various applications of UAV (drones) technology. This assignment ties learning of web development techniques with learning of novel applications of UAV technology. (Appendix 9). The assignment was deployed in W17 as a bonus. The students enjoyed working on it and did a fantastic job. An example student work is included as Appendix 10.

Another innovation to the course is a JavaScript programming assignment. The students will program an intelligent UAV route for an urban area to be monitored (e.g., for water flooding). An efficient route should avoid flying over unnecessary regions. The assignment not only practices basic programming skills, but also prepares students for solving real world problems. This assignment is ready to be deployed after the SOCS approval.

Appendix

1. FLAIRS-30 Conference Poster
2. Paper submitted to the Journal of Water Management Modeling
3. Invitation Letter from NUAA
4. Presentation on Faculties and Research Strength at SoCS

5. Presentation on SoCS BComp Program
6. Presentation on SoCS MSc Program
7. Presentation on SoCS PhD Program
8. NUAA Summer Lecture Program
9. Assignment on Drone Technology Website
10. Student Example (To open, first unzip the file “Student Work”, and then right click the file index.html with any browser.)