

WT2.9: University of Bradford, Bradford, UK

Report

Activities performed during the visit

in University of Bradford

period: 6-09-2014 - 13-09-2014

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The main entrance to the university campus

Personal Information

Mrs. Urszula Markowska-Kaczmar, member of Computer Science and Management faculty, Wrocław University of Technology, Poland visited School of Computer science, Bradford, UK in the period from 06-09-2104 to 13-09-2014 in order to carry out research and training activities in the field of artificial intelligence.

Information about Seminars

The seminar presentation was organized on 11.09.2014. It was entitled: “**AI topics in the ENGINE Centre from prospective cooperation view**”. The seminar contained also the presentation of ENGINE project and the Wrocław University of Technology.

Description of scientific activities

The main aim of the visit was quest for areas of research where know-how of both university partners can be exchanged and practically applied. Two groups from Bradford University expressed their interest in closer cooperation with WrUT: the AI Research (AIRe) Group lead by prof. Daniel Neagu which is one of the largest in the University of Bradford and a part of the group of Visual Computing led by prof. Rami Qahwaji. The group is focused on medical imaging and its automatic analysis.

AIRe conducts research funded by BBSRC (Biotechnology and Biological Sciences Research Council), EPSRC (Engineering and Physical Sciences Research Council), TSB (Technology Strategy Board who helps business develop new products and services - and bring them closer to market) and EU and industry sponsors. Generally, the AIRe's research is focused on machine learning, information representation and integration, data mining, knowledge discovery with applications in data governance, health care, web databases and social networks, chemo- and bio-informatics, business intelligence, decision support systems, operations research and education.

The Visual Computing has established a medical imaging research group which includes a decent number of research students, medical collaborators and industrial partners. The Visual Computing group research interests include: 2D/3D image processing, machine learning and the design of machine vision systems with proven track record in the fields of satellite imaging, medical imaging, data visualisation, applied data mining, super-resolution, etc working with medical and industrial collaborators. Prof. Rami Qahwaji was involved in research funded by EPSRC and in research activities funded by the EU COST action. He has led the development of a new technology which can provide automated near-real-time prediction of significant solar flares by analysing satellite images.

Between topics and methods presented during the seminar the main interest was expressed to the following:

- Automatic medical image analysis methods. The methods developed by WrUT lie in the area of research skills and interests of Prof. Rami group include, but are not limited, to 2D/3D image processing, machine learning, signal processing and the design of machine vision systems with proven track record in the fields of medical imaging, data visualisation and applied data mining working with medical and industrial collaborators,
- The logical document page structure recognition method. The method would be useful for automatic analysis of reports from experiments for Syngenta corporation (<https://www.syngenta-crop.co.uk/index.aspx>). They have scanned documents from the past experiments. The problem is how to acquire information from them. If the company is still interested in the design of such product we will be in touch.
- The methods of data visualization and feature extraction developed in WrUT They are presented in the papers: *Improved Sammon Mapping Method for Visualization of Multidimensional Data* Halina Kwasnicka and Pawel Siemionko, Nguyen et al. (Eds.): ICCI 2012, Part II, LNAI 7654, pp. 39-48, 2012 Springer and *Correlation-based Feature Selection Strategy in Neural Classification*. H. Kwasnicka, K. Michalak Proceeding ISDA '06 Proceedings of the Sixth International Conference on Intelligent Systems Design and Applications - Vol. 01, pp. 741-746. The methods seem to be useful for Bradford University in their research in bioinformatics.
- Dr Anna Palczewska has proposed cooperation in the area of feature importance assessment which is very important for companies involved in medicine production and for evaluation of

their toxicology. This subject seems to be very close to the rule extraction from neural networks using genetic algorithm developed in our group. Therefore we decided to work jointly on this subject.

Summing up, the following area was chosen for further cooperation:

- data mining methods (Prof. Daniel Neagu and Artificial Intelligence Division staff),
- assessment of existing classification models (Anna Palczewska and Urszula Markowska-Kaczmar)
- medical imaging (the contact was sent to Martin Tabokow for further communication with Prof. Rama Qahwaji).

Information referring to the intellectual property

Russ Hodgetts is our IP manager at the University of Bradford but he has no time for meeting in the period I stayed in Bradford, so I decided to quote some regulations at the university defining all general rules in this area. There are documents referring to the sponsored research and generally to the patenting procedure.

Regulations defining intellectual property at the university

University of Bradford specifies the following regulations referring to the intellectual property (<http://www.brad.ac.uk/rkts/media/rkts/documents/INTELLECTUAL-PROPERTY.pdf>)

1. The University through the provision of the Copyright Designs and Patents Act 1988, claims ownership of all intellectual property as specified in section (6), which is devised, made or created:

(a) by persons employed by the University in the course of their employment;

(b) by those engaged in study or research at the University who have agreed that this condition shall apply to them, e.g. postgraduate students;

(c) by certain persons, under prior agreement, engaged by the University under contract for services during the course of or incidentally to that engagement.

2. The University acknowledges that in certain circumstances, external funding including but not limited to; research council, charities, companies and other institutions may have an impact on the ownership of IP generated. This will be dealt with appropriately, on a case-by-case basis.

3. Under this policy the University undertakes not to assert any rights on intellectual property generated by undergraduate students in the course or related to their studies. However, University assistance may be available to these students if they wish to pursue exploitation of this IP in which case the rights may be more appropriately assigned to the University.



4. The University's rights under (1) above in relation to any specific piece of intellectual property may be waived or modified by agreement in writing with the person(s) concerned. This may occur when IP is not to be exploited by the University in which case the rights may be assigned to the inventor. However, the University retains the right to receive a revenue share of any net income if or when the IP is exploited.

5. The University shall reward inventors of any exploited IP by sharing any net income (that is, after the recovery of costs) from the commercialisation of its intellectual property first devised, made or created by those persons described. The proportion of this revenue share will be on a case-by-case basis. Individuals employed by the University to assist in the identification, protection and commercialisation of IP will not receive any additional financial benefit for their involvement in this activity unless explicit approval is given by the appropriate University body.

6. The intellectual property of which ownership is claimed under (1) above includes:

- (a) patentable and non-patentable inventions;
- (b) works generated by computer hardware or software owned or operated by the University;
- (c) videos, multimedia works, films, sound recordings, typographical arrangements and other works created with the aid of University facilities;
- (d) registered and unregistered designs, plant varieties, genetic modifications and topographies;
- (e) any works not included in (6) (a), (b), (c) or (d) commissioned by the University;
- (f) databases, spreadsheets, firmware, courseware and related material not within (6) (a), (b), (c), (d) or (e), if the University considers it to possess commercial potential; and
- (g) know-how and information associated with any of the above.

7. The University undertakes not to assert any claim to the ownership of intellectual property rights in: books, articles, plays, lyrics, scores, artistic works, other than ones commissioned by the University unless the work is deemed important to the protection and exploitation of other IP generated by these individuals in the course of their employment.

Sponsored research

University of Bradford has special regulation (regulation 30) describing policy and procedures for sponsored research, patent agreement and testing. The university pays special attention to the sponsored research, which may involve total ownership by the sponsoring body of the results of the research. The university may allow part of the net income derived from charges for sponsored research work to be allocated for the benefit of the academic area(s) concerned in the research. It is not allowed to make separate payments direct to staff members in addition to what it will be paying to the University as charges for staff salaries. Below are university's regulations referring to sponsored research.



General principles to govern the undertaking of sponsored research.

a) Sponsored research would normally be undertaken by the University only if the academic interest in the work is sufficient to make it attractive, or as a public service to the industrial and commercial Community or the Government or if it has training value to staff and students or if it will serve the purpose of increasing outside income or for a number of these reasons.

Much effort is sometimes needed to obtain sponsorship from firms for research projects or to persuade them to place research contracts with the University and while the general principles apply to all work it would be unwise to take too rigid a view about not allowing patent rights to accrue to a sponsoring body. It is important that each project be considered on its merits. Restrictions on publication may also be involved.

Financial arrangements for research work will be considered in the light of the following broad principles:

i) In each case there should be an assessment of the full costs involved over the whole period of the project with provision for review as necessary.

ii) The actual charge should normally reflect what the market will bear and should be as close as judged practicable to the full economic costs. It might even be in excess of full costs in some cases, e.g. where substantial commercial gain seems in prospect for the sponsoring body.

iii) Where it is judged to be impracticable or undesirable to charge full economic costs this should be a conscious and deliberate decision of the University.

b) Distribution of income from sponsored research should operate to give proper encouragement to academic areas and their staffs to undertake such work, and arrangements to that end should, if possible, be made at the stage of settling the contract.

The University shall have a discretion to allow part of the net income derived from charges for sponsored research work to be allocated for the benefit of the academic area(s) concerned in the research.

c) The sponsoring body shall be informed that it will not be in order for it to make, as part of its contract with the University, separate payments direct to staff members in addition to what it will be paying to the University as charges for staff salaries.

d) A member of staff engaged on sponsored research may act as a consultant to the sponsoring body concerned provided that it is understood by the sponsoring body that any fees which are paid for consultancy and retained wholly by the member of staff concerned are quite separate from, and independent of, the charges made by the University for the sponsored research. In such cases there

should be an entirely separate contract drawn up between the individual member of staff and the body concerned.

(e) The circumstances of a contract for sponsored research may be such that, whilst an independent contract for consultancy would be inappropriate, there is nevertheless, arising out of the contract, work which must be performed by a specific member or members of the University but which does not form part of his or her normal duties. In such a case and if the costs have been agreed in the financial estimates an appropriate payment may be made from the contract income to the member(s) of staff concerned at the recommendation of the Head of Department after consultation with the Director of Research Support and Industrial Liaison, and subject to the final approval of the Vice-Chancellor.

Cost sponsored projects

a) Types of costs involved in sponsored research A typical research project might give rise to costs of the following kinds:

i) Staff directly employed for the research project, materials used, equipment bought, travel, subsistence, secretarial help, etc.

ii) Ancillary costs which represent identifiable additional burdens on the University: for instance, extraordinary labour costs, or the rent, rates, and maintenance of additional premises.

iii) Use of expensive equipment or of specific services such as computer time. These costs can usually be assessed by means of standard tariffs (see paragraph I 3. (b) (ii)).

iv) Indirect costs, such as the notional rental, rates and maintenance of the University accommodation in which the project is carried out; the cost of academic staff time devoted to the project; and the call on library resources or on the time of senior administrative staff.

b) Assessment of the costs involved in sponsored research.

i) It is envisaged that, normally, the indirect costs I 3. (a) (iv) could satisfactorily be covered by a percentage addition to the ascertainable costs under (i), (ii) and (iii) above. The actual percentages used may vary widely and can only be determined in the light of the demands of the particular project. They should form the subject of discussion and agreement at an early stage in the negotiations with the sponsoring body. The total assessed cost of the contract (as opposed to the charge actually made) should not vary in relation to the nature of the sponsoring body or to any special conditions laid down by and agreed with that body (eg reservation of patent rights or restrictions on publication of results) or to the importance to the University of the work involved; it should relate only to the extent and cost of the work.

ii) Charges for the use of expensive equipment should be calculated on the basis of hourly or daily charges derived from the estimated annual operating costs including overheads, and a depreciation element based on initial cost amortised over the effective life of the equipment, plus appropriate interest.



c) Decision as to the actual charge to be levied.

i) Once the total cost has been ascertained, it is a matter for separate decision by the University whether the actual charge for the work should be the ascertained total cost or some higher or lower figure arrived at in the light of the general principles set out in paragraph I 2. (a) above. The reasons for any variation below economic cost should always be placed on record in the University.

ii) Sponsored Research undertaken for outside bodies (including Government Departments) may present features which justify a decision not to charge full cost. For example, co-operative research projects with industry or Government research contracts might fall in this category to greater or lesser degrees. These will also be cases where the University wishes to stimulate the interest of outside bodies in the services it is able to carry out for them, whether for mutual advantage in research or for student training or in order to build up a connection to facilitate future co-operation.

iii) With regard to Government contracts, there is, as such, no reason not to charge the full cost but the University would not normally charge a higher figure than this and would aim, other things being equal, to give preference to such contracts and not to be reluctant to reduce the charge if the work were likely to be both of public importance and of interest to the University in relation to its own programme of work. It may be, for example, that sometimes there will be services which can properly be rendered to Government departments at a reduced price because capacity, already paid for by the HEFCE, is brought into fuller use or is properly diverted from an alternative use but this is by no means always the case and, in some instances, a refusal to pay real costs could lead to a harmful diversion of resources from the purposes for which they were given or intended.

iv) Only in exceptional cases in which the University is, by conscious decision, ready to help to meet the direct costs of the project, should the charge to any sponsoring body fall below the aggregate of direct costs under I 3 (a) (i) (ii) and (iii) above.

Administrative regulations

a) The advice of the Registrar and Secretary, and the Director of Research Support and Industrial Liaison as appropriate, should be sought at a very early stage and invariably well before the point at which a contract is drafted. The following are some of the aspects on which early advice is particularly necessary.

i) The assessment of the full economic cost.

ii) Proposals to levy less than the full economic costs.

iii) The estimation of indirect costs.

iv) Proposals to accept restrictions on publications arising from the research programme.

v) Proposals that any of the proceeds from the research should be 'earmarked' for a particular academic area or that individual members of staff should receive extra personal remuneration.

vi) Proposals regarding patent rights or other industrial property.



vii) If research is 'aided', what is the source of the balance of the finance required.

b) The Research Support and Industrial Liaison department has been established with the object of providing the University and its academic departments with assistance in establishing and developing collaborative research between industry and the University, including a central service for the negotiation of resultant contracts and assisting with the associated administrative arrangements. The Director's functions will be complementary to those of the Registrar and Secretary in that his or her expertise will be at the disposal of the University investigators and to the Head of Department or Named Person concerned for, among other things, the preparation of the form mentioned in paragraph I 3. (b) (iii) and the supporting documentation. In addition he or she will be able, if called in at a sufficiently early stage in the negotiations, to help in securing arrangements likely to be acceptable to the University.

c) As soon as it is proposed to enter into a contract for sponsored research, it shall be the responsibility of the University investigator to consult the appropriate Head of Department or Named Person and the Director of Research Support and Industrial Liaison. The official form (copies are obtainable from the Director of Finance) should be completed and sent to the Registrar and Secretary accompanied, should there be any proposals of the kind described in paragraph I 4. (a) (ii), (iv), (v) or (vi), by fully reasoned case in support.

In completing the form it should be borne in mind that the economic costs of the proposed research will be evaluated on the basis of paragraph I 3. (a). d) The completed form and its supporting documentation will provide the basis on which consideration will be given to the viability of the proposal. Subject to such consideration, which will involve the Registrar and Secretary consulting the Vice-Chancellor and such other persons as may be necessary, having been given, and its outcome being favourable, the Registrar and Secretary will notify approval of the proposed arrangements to the investigator and to the Head of Department or Named Person concerned. This will enable the investigator to proceed with the sponsoring body to the stage of preparing a draft contract or agreement, which will then be scrutinised and signed by the Registrar and Secretary and subject to the approval of the Vice-Chancellor it will then be agreed on behalf of the University.

Patenting

Policy of Patent Agreement

a) Patents may arise from:

i) sponsored research, in which case the true inventor may be a member of the permanent staff, or a research fellow or assistant, or a student, or any combination of the above;

ii) work done by a member of staff as part of his normal duties;

iii) work done by a member of staff wholly independently of his normal duties.

b) It is essential that any contract for sponsored research in which there is any possibility of patentable inventions occurring should provide for the vesting of the ownership of the patent rights.



This may be the sponsoring body, the investigator, or it may be the University. If it is the sponsoring body the contract may provide for a share of royalties to accrue to the University. The proportion which should so accrue will depend entirely upon the agreement of the parties as set out in the contract.

c) If the contract for sponsored research provides that any patent rights vest in the University, there may then be a need for a second and separate contract to be concluded between the University and the member(s) of staff who is (are) the true inventor(s). This contract should be drawn up as provided in paragraph (d) below.

d) In the case of a patent arising from an invention produced by a member of staff in the course of their normal employment, the property in the patent will vest in the University which will in every case retain the full patent rights and deal with royalties as follows:

i) The University will recoup all the accrued costs, including the costs of obtaining the grant of the patent.

ii) The above costs having been recovered, 50% of royalties will accrue to the inventor(s).

e) If, in the cases specified in paragraphs (c) and (d) above, there are two or more true inventors, the University shall normally enter into a contract with the true inventors jointly or, at the request of the inventors, may enter into a contract with one of the true inventors on behalf of them all.

f) Members of staff may wish to take out a patent arising from work which is neither the subject of sponsored research nor related to their work in the University at all. In such circumstances, the policy of the University is to advise the inventor to file a patent with the aid of a patent agent.

g) In circumstances where an invention arises from work carried out within the University by a member of staff outside the course of his normal duties the University would not be concerned with the patent as such, but might require to enter into a contract with the inventor at the time of his taking out the patent, to provide for the recovery by the University of all or part of any costs incurred by the University in providing the facilities which enabled the original work to be carried out. This contract would normally specify a lump sum as agreed between the parties to be paid as a first charge against any royalties accruing.

h) Members of staff are required to inform the Council, through the Registrar and Secretary of their intention to take out a patent associated with their work in the University. In the case of patents not so associated members of staff are advised to consult the Council, again through the Registrar and Secretary.

j) The services of the Director of Research Support and Industrial Liaison are available for discussions on all the above matters.

l) Publication of the Patents Act 1977 is noted and the terms of the University agreements are of course subject to the statutory provisions laid down therein or in any subsequent relevant Patent legislation.



Patenting Procedure

a) The University wishes to encourage ideas likely to have practical application, and any member of staff can normally expect that the University will support a patent application, given a reasonable likelihood that the invention has commercial potential. Each case will be considered on its merits and if the decision is taken to proceed the Registrar and Secretary will authorise the Director of Research Support and Industrial Liaison to file an application and the University will pay the costs of the application, patent agents' fees, and any other necessary expenses.

b) If the University does not wish to patent or exploit the invention it will inform the member of staff who will then be free to make his or her own arrangements.

c) Where the University makes application for a patent it will use the early stages of the process to gather information and, with the assistance of the inventor, to attempt to interest industry and to explore the possibility of commercial exploitation.

d) The Director of Research Support and Industrial Liaison will advise the University on the appropriate action to be taken in any particular case. This may be:

i) To file a complete specification in the United Kingdom in the name of the university and to take the necessary action in such other countries as seems appropriate. The inventor could be licensed by the University to file in any additional countries at his own expense.

ii) To act through the NRDC (surrendering 50% of the potential income in return for their financial and other assistance).

iii) To offer the invention to industry with the assistance, if appropriate, of a patent agent, with the aim of achieving agreement with one or more manufacturers for licensing the patent, preferably with the licensee paying the cost of the completed specification.

iv) To sell an option on the patent.

v) To consider the formation of a company, with others or not, to exploit the patent.

vi) To consider other possible methods of exploiting the invention.

e) The position will be reviewed by the University, in consultation with the Director of Research Support and Industrial Liaison and the inventor within nine months of the date of filling the application. The purpose of this review will be to recommend which, if any, of the above courses of action should be followed. Where any course of action involving a continuing University interest is taken, the Director of Research Support and Industrial Liaison will periodically review the position on behalf of the University in order to decide any appropriate further action, or alternatively to recommend that the rights of the University in the patent be allowed to lapse.

f) If the University decides not to file a specification or decides to allow the rights to lapse, then the inventor will be free to act in his own interests at his own expense.

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Description of the cooperation between universities and industry

The latest report on innovative activities in the UK [1] by the Department for Business Innovation and Skills (BIS) claims that the UK is performing well in most key areas and the overall level of innovation investment in the UK remains strong compared to other countries.

Generally, my impression is that University of Bradford has strong cooperation between industry, business and government. University teaching staff sustains efforts to maintain contacts with past students that currently lead projects or have managing positions in their companies. Lot of business funding is based on private social connections at the beginning.

Many people at the university staff are experts in various areas and they are involved as consultants in business. This job can be additionally paid.

There are several agencies where one can search for funds for projects. On the national level there are: BBSRC (Biotechnology and Biological Sciences Research Council), EPSRC (Engineering and Physical Sciences Research Council), TSB (Technology Strategy Board), but the Innovative UK, Technology Strategy Board is the main organization who financially supports the cooperation between business and universities.

Yorkshire also supports such cooperation on the regional level [4]. ADI (Advanced Digital Institute) located in Saltaire near Bradford is very interesting company. It brings together a wide range of highly skilled, experienced professionals. They use technology to transform essential services such as healthcare, energy, housing and education. In 2013 ADI received funding boost from SBRI (Small Business Innovation Research) healthcare programme. ADI strongly cooperates with University of Bradford. Lately ADI performed training in Poland.

From organizational point of view the cooperation between SME and universities is made based on the KTP (Knowledge Transfer Partnerships). It is Europe's leading programme helping businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. With the help of a KTP Adviser and the support of your KTP Office, business can identify an academic or researcher who has the right expertise for the business. The agreed project could be for any length of time between 6 months to 3 years, depending on the business need. The overall aim of the KTP is to help the business make a step change in the area that is identified as a high priority.

KTP are one of the UK's largest graduate recruitment programmes and are partly funded by the Technology Strategy Board and other Research Councils. They offer up to 67% subsidies on projects from £40k upwards;

Each partnership employs recently qualified people (known as an Associate) to work in a company on a project of strategic importance to the business, whilst also being supervised by the Knowledge Base Partner. The Associates are either postgraduate researchers, university graduates, or individuals qualified to at least NVQ (Level 4) or equivalent.

At the heart of each Knowledge Transfer Partnership is a relationship between a company and staff in a Knowledge Base organisation applying their expertise to a project that is central to the development of their Company partner. In the process, staff in the Knowledge Base Partner are able to enhance the business relevance of their work. KTP has worked with over 3,000 organisations.



Yorkshire Innovation Fund (YIF)

On regional level business partnership is led by Business Partnerships Manager at University of Bradford - Melanie Powell who is responsible for cooperation between business and university. She gave me basic information about university and region policy in this area. It is also described in detail on the web site [2].

YIF is funding a collaborative project between a company and a local university. It is the idea of local government to stimulate economic growth of Yorkshire region. The government has itself begun to come out of the assumptions that many new ideas require a blend of skills and expertise to get them off the ground and working with a local university can often help by providing access to expertise, specialist equipment or facilities or new talent to develop your idea. YIF funds this access.

Part-financed by the European Regional Development Fund (ERDF), YIF is specifically designed to help Yorkshire & Humber Small and Medium Sized Enterprises (SMEs) across a range of sectors work with our local universities to make things happen. YIF supports the following type of projects:

- **Small Innovation Project (SIP)** - up to £10k support, for example, working on a prototype new product or service offering to grow existing customers and attract new ones
- **Research & Development Project (RDP)** - up to £31k support, for example, developing a new improved product, service or production and delivery process - to open up new markets, retain and grow customers or attract new customers to your business
- **Graduate R&D and Innovation Placement (GRDIP)** - either 6-12 months duration (up to £20k support) or 12-18 months duration (up to £30k support), helping with the cost of a new person to bring fresh perspectives, new ideas, and breathe life into your new ideas by providing an expert pair of hands
- **Strategic Intervention (SI)** - if you are a member of an association of companies in the Yorkshire region with similar R&D and innovation needs you can choose to work together with one or more universities to ask for a combined project that would benefit you all

Industry sponsored research

This arrangement works best for when an academic to carry out research is searched by the business and the company has funds to support it (either in full or part). Research grants or government funding may be available to support this work. To help in such project the School of Management coordinates a series of 6 professional networks for companies to access. Each has a slightly different focus but with shared practice and a number of shared and interwoven services.

The **University of Bradford** opened its doors in June and provides a new space for research, regeneration, reinvention and rethinking the future. In addition to work conducted in the Research Centres, the School of Management has also contributed to pan-university research and knowledge transfer initiatives. The School led on development of the £6.5million externally funded re:centre to create a new physical asset in the heart of the campus to partner with businesses and deliver radical business solutions, particularly around sustainability and the circular economy.

The re:centre formalises the various strands of University research on sustainability and embeds the commitment to corporate social responsibly. This is a key development to enhance research capability by promotion of engagement with business and the community across a broad disciplinary



base. In partnership with the Ellen MacArthur Foundation (EMF), the re:centre hosts the Ellen MacArthur Network hub for the Northern Field Development Officer programme, working with schools to promote the concepts of Circular Economy.

References:

[1]https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/34805/12-p188-annual-innovation-report-2012.pdf

[2] <https://www.innovateuk.org/university-business-collaboration>

[3]https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32383/12-610-wilson-review-business-university-collaboration.pdf

[4] <http://www.yorkshireinnovationfund.org/university-partners/>

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Other activities

During my staying in Bradford I also took a part in United Kingdom Computational Intelligence Workshop. Although the name suggests national rank, the workshop was international with the number of participants equal to 50, mostly young researches. It was organized as one track that causes that each session has many active listeners. I have presented the paper: Fast Learning method of interval type-2 fuzzy neural networks for classification.

We agreed with prof. D. Neagu to initiate an Erasmus programme agreement between our faculties. I have just spoke with our faculty coordinator who will make next steps to sign the agreement.

I also visited laboratories of School of Engineering and Informatics. Currently AIRe division has no research labs. They have only didactic labs, which are very huge, for example one lab consists of 100 computers. Lectures in programming are conducted in this lab. Students can make exercises during a lecture. The lecturer has two teachers and 3 phd students additionally for help. Media Design and Technology has labs dedicated to game production, media production and film and media studies but they are also used mainly for didactic purposes.

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REMARK: Apart from this information also a program of the visit and the presentation in electronic version should be given to the project office (please send all of them to Urszula.Markowska-Kaczmar@pwr.wroc.pl). Please respond to the points 1-5 for outgoing visit and points 1-3 for incoming visit. Point 6 is for extra activities that are not put in points 1-5.

