Newsletter

NUI MAYNOOTH

NUIM OFFICE OF COMMERCIALISATION

CONNECTING EXPERTISE AND INDUSTRY

NATIONAL UNIVERSITY OF IRELAND MAYNOOTH, MAYNOOTH, CO KILDARE IRELAND

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Welcome to the third edition of the information sharing newsletter from the NUI Maynooth Commercialisation Office. Our goal is to share the latest news and activities in the commercialisation of NUIM research. We hope you enjoy the newsletter and find it informative. Comments to commercialisation@nuim.ie.

STUDENT ENTREPRENEUR COMPETITION

The finals of the Student Entrepreneur Competition took place on Wednesday April 16th. Four teams competed for the 1st prize of €6K, 2nd prize €3K and 3rd prize €1K. The finalists represented a wide variety of disciplines and interestingly 5 out the 9 finalists came from outside of Ireland. Judging the finalists were the following;

- Dennis Jennings: 4th Level Ventures
- Paul Lavery : McCann Fitzgerald Solicitors
- Peter O'Reilly: Manager Bank of Ireland Maynooth
- Damian Callaghan: Intel Capital

The purpose of the competition was to get the competitors to tackle the challenges that arise when setting up your own business. The judges took no prisoners as they probed the teams to see if they had considered all the issues. After deliberating for 20 minutes to make a decision, the judges awarded the prizes as follows;

1st prize: Lingua Franca—Nicole Holmes and Aida Ennis

2nd prize: Sentiment—Hans Stam, Tina Chen, Andrew Gaynor and Mahendranath Kumar Gangah

3rd prize: Czars restaurant — Giedre and Zaneta Visockaite

4th prize: Institute of Success— Cormac Moore

Well done to those who participated. We are looking forward to running the event again next year.

For more information on the competition check out our website at

http://commercialisation.nuim.ie/2008/04/16/competition-roundup/.

Above: The finalists and the Judges of the NUIM Student Entrepreneur Competition. Back Right: Dragons. Front (left-right) Czars, Sentiment and the winners Lingua Franca.

RECENT LICENSE DEALS

NUIM researchers have completed 4 license deals in 2008 so far. They are:

- licence of a Hamilton Institute patent on software appliance anomaly detection to a large international telecoms company.
- license of NCG created Geographically Weighted Regression software to a US company.
- license of NCG created Geographically Weighted Regression software to a US University.
- license of NCG created Video Mapping software to a US University.

This is a substantial success and continues to demonstrate the world class research being conducted at NUIM and how our technology is sought by Industry.

RECENT COMMERCIALISATION GRANT SUCCESSES

NUIM has been very successful once again in the first round of Commercialisation Fund awards in 2008. We applied for commercialisation funding from Enterprise Ireland for 7 projects and were awarded 5. This is an excellent success rate. The successful applicant PI's were:

- Maryanne Dalton – a Commercialisation Fund Technology Development (CFTD) award to bring novel biosensors to market;
- Shirley O'Dea – a CFTD award to bring to market a medical device for treatment of lung deceases;
- Ronan Farrell – a CFTD award to commercialise a scheme for antenna array calibration;
- John Lowry – a Proof of Concept (PoC) award to develop novel sensor prototypes;
- Sean Doyle – a PoC award to develop a novel selection marker for fungal transformation.

Congratulations to all the recipients and we look forward to working closely with you to bring these technologies to market.

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RESEARCHER SPOTLIGHT: DR URŠKA DEMŠAR

Above: Researcher Dr Urška Demšar

Dr. Urška Demšar is a Researcher at the National Centre for Geocomputation at NUIM. Her primary research interests are in Geovisual Analytics and Geovisualisation. She is combining computational and statistical methods with visualisation for knowledge discovery from geospatial data.

Geospatial data contain information relating to the position of the objects, people and zones of interest below, on, or above the Earth's surface together with attribute information that describe their characteristics at that location. One of the challenges for Geocomputation is how to explore these data to discover unknown, but potentially useful knowledge.

Spatial data collections are typically large and highly-dimensional - properties which make them difficult to analyse. Particular properties of geospatial data, such as spatial dependency and spatial heterogeneity, prevent use of classical data mining methods for this task, as these assume that the data are randomly distributed and independently generated.

One of the ways to address this problem is to combine spatial data mining methods or spatial statistical methods, such as for example Geographically Weighted Regression (GWR), with visualisation methodology, to visually identify spatial and multivariate patterns in the results of the computational or statistical method. Complex results data are projected onto the two-dimensions of the computer screen using various multivariate visualisation techniques, which are interactively connected to each other to let the analyst explore and look for patterns, relationships and structure. Discovered patterns are then used to analytically reason about the data and infer knowledge not only about the characteristics of the data but also about spatio-temporal processes that generated the data.

This process is investigated in Geovisual Analytics, "the science of analytical reasoning and decision-making with geospatial information, facilitated by interactive visual interfaces, computational methods and knowledge construction representations", which is a recent new discipline in Information Visualisation.

Urška's research at NCG combines Geovisual Analytics with GWR (developed by her NCG colleagues, Prof. Stewart Fotheringham and Martin Charlton) to facilitate interpretation of GWR results and help understand complex spatio-temporal processes.

IP CORNER: TALKING ABOUT FUTURE WORK

In scientific papers researchers often add a Conclusions section which summarises the work detailed in the paper. It is also common to write a paragraph on "Future Work". This can be detrimental to securing patent rights on future discoveries. Since such "Future Work" usually covers aspirations, it rarely adds huge value to the paper (i.e. the difference between an editor and reviewers recommending publication rarely hangs on what is described in "Future Work"). If for example, your paper describes work on identifying a biochemical pathway and in "Future Work" you state that certain proteins could be used as biomarkers in a particular disease, then isolation of such a biomarker in later work will be difficult to patent as a biomarker since your own publication has indicated such a possibility, thereby creating prior art and compromising your later inventive argument. So it is often wise to be careful talking about future plans.

SPOTLIGHT ON INTERACTING WITH INDUSTRY

As Irish government agencies focus more on a strategy toward a knowledge economy, funding agencies are increasingly keen to see Universities develop links with Industry. For some researchers this can be daunting and it helps to understand how industry works as you try to develop research links.

A key to any successful partnership is to try to see things from the other parties' perspective. With that in mind we constructed the table below right to show extremes on the sides of Academia and Industry with a view to demonstrating some differences. Once you understand these different perspectives, it will help you "talk the language of Industry" and make them feel comfortable that you are sensitive to their needs. One big difference is that academic research is by nature conservative and rigorous. The scientific method involves demonstrating principles with data and adopting cautious approaches as understanding increase. Industry on the other hand generally rejects a rigorous approach and "if it works and you can sell it", then that's good enough. So academics talk about "an interesting problem" whereas Industry care for solutions, not problems. Universities generally create open knowledge, whereas Industry creates proprietary knowledge.

Academic achievement largely rewards individual contributors. People win Nobel prizes, not Universities. In contrast, Industry advances by virtue of focused teamwork. So working with industry means working on projects which may not be of huge personal interest but are directed towards the company goals.

Another difference is that while University research is broad and a sum of many different disciplines, Industry is generally focussed on a narrow portion. Industry sees collaboration across all disciplines internally and only rarely externally while University research collaborates externally much more than internally. Industry also focuses more on short term, near market projects and rarely publishes, in contrast to Academia.

The mindset between both enterprises is different, but understanding it helps you better understand how to make your research work on both sides and being able to adopt the Industry mind-set will certainly help you develop strong partnerships with Industry.

Of course it is equally important, as we work with Industry, to help them understand that our role is to push back the boundaries of knowledge, that publication is our lifeblood and we are equally competitive in seeking that we are recognised for scientific excellence.

ACADEMIC BIAS	INDUSTRY BIAS
Open knowledge	Proprietary knowledge
Must be perfect / rigorous	Good enough will do
Sole contributor	Team
External collaboration high	External collaboration low
Internal collaboration low	Internal collaboration high
Problem focussed	Solution focussed
Broad technical expertise in Univ	Narrow technical expertise in Industry
Usually publish	Rarely publish
Long term projects	Short term projects

RECENT PATENT FILINGS

NUIM have filed 7 patents to date in 2008. They are:

- a device for drug delivery to the lungs, invented by Shirley O'Dea and Michael Maguire;
- a novel protein labelling technology, invented by Sean Doyle and Deirdre Stack;
- a sensor for measuring parameters such as Nitric Oxide, Oxygen and blood flow in brain tissue, invented by John Lowry, Niall Finnerty and Finbar Brown;
- a method for estimating wireless link quality, invented by Doug Leith, David Malone and Domenico Giustiniano;
- a method for software appliance anomaly detection, invented by Doug Leith;
- a method for providing a text messaging service, invented by Carlos Villegasramos;
- a method for controlling the motion of a graphical object, invented by Tomas Ward and Seamus McCloone.