UNIVERSITAIRES SANS FRONTIÈRES — ACADEMICS WITHOUT BORDERS

Quarterly Newsletter n°28, December 2017

Newsletter

In this newsletter, we present the results of the exploratory visit of our Vice-President Xavier Alphaize in West Africa, which enabled him to meet several personalities from several countries and to open prospects for collaboration.

Then we give a report of our strategic meeting which took place in early December in Lyon. To conclude this newsletter, we forward announcement for post-doc positions in IT in Malaysia.

Finally, we wish an excellent year 2018 to all our readers. ∎

Prof. Robert Laurini, president of USF-AWB.

Higher education in Senegal: Profound changes and adaptation to national issues

Meeting with the minister

The Minister of Higher Education and innovation, Mr. Mary Tareen Nasser, received for more than one hour, Xavier Alphaize, Vice-president of USF and explained the axes of the changes underway in the higher education in Senegal. A substantive reflection has been initiated since 2012 by the ministry to take account of the international issues of this sector, the significant increase in the number of staff, the need of vocational training, the need to steer research into the country's development issues.

In addition to that, other goals are the upgrading and widening of infrastructures, the establishment of a quality system to evaluate the performance of public higher education as well for private, the improvement of links with the labor market, and a more effective governance.

A considerable program is now being implemented, which represents a consequent budgetary effort for the country: between 2012 and 2017, expenditure in the higher

education sector is 2.5 times those between 1960 and 2012! The university experienced some upheavals in 2014/2015 when all these reforms were put in place. But today the new cruising pace is needed.

A procedure for evaluating universities

The National Quality Assurance Authority in higher education has the task of evaluating all national institutions, both public and private. A culture of evaluation is developing. The students are now distributed indifferently by the ministry in all the higher education institutions which are entitled to issue diplomas.

Higher education will soon be endowed with a virtual university. Research is taking on a new

dimension, focused mainly on research action associated with the country's development priorities. Business incubators must now be set up in all the higher education institutions in the country, so as to integrate the students into the process of starting up a business from the beginning of their studies.

A USF cooperation protocol/Senegalese Ministry of Higher Education

In this vast work of adapting Senegalese higher education to the stakes of its development policy, the minister hopes that USF/AWB can contribute to it. A cooperation protocol should therefore soon be signed between this ministry and USF. ∎

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A cooperation protocol with Malian public universities

A meeting of USF-AWB was organized on October 3, in Bamako on the initiative of the Ministry of Higher Education and scientific research of Mali. It brought together senior officials and leaders of public institutions in the country (rectors, directors general of the major schools, representative of the Ministry) of the University of Science, Technology and technology, University of Social Sciences and management of Bamako, the University of Ségou, the ENSup, the IPR, the ENI, the ENETP. It allowed USF-AWB to present its objectives, modalities of cooperation with higher education institutions. The discussions focused on the academic issues encountered in West Africa and, in particular in Mali, concerning the research problems, as well as the modalities of implementation of USF cooperation with Malian universities.

The exchanges that followed with the management and teams of the ENSup and the normal School of technical and vocational education provided an opportunity to take a glimpse at the potential of these two major schools, their objectives and the expected support of USF that concern the development

of research capacities, distance training and on-line documentation, the organization of continuing education are the subject of detailed data sheets. ∎

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The bases of USF/CAMES cooperation on university issues in Africa

In a professional stay in Ouagadougou, the Vice-president of the NGO USF-AWB, Prof. Xavier Alphaize, was received by the Secretary General of the African and Malagasy Council for Higher Education (CAMES), Prof. Bertrand MBATCHI, in the afternoon of Thursday, September 23, 2017.

This interview focused in particular on academic issues in Africa; the Secretary general of the CAMES and the Vice-president of USF foresee the future of their collaboration with great enthusiasm, while many objectives are common.

CAMES did indeed have a strategic development plan for the period 2015/2019, a plan which includes the framework of the values in which the expertise is recognized. This concerns the 19 member-countries of Central Africa, West Africa, the Great Lakes region and the Indian Ocean. It was recalled that USF has developed numerous academic cooperation in many of these countries.

It was fully desirable that dialogues and cooperation be undertaken between the two institutions on the problems and themes of common reflections, such as the development of research, the opening of new channels or the creation Virtual Universities in sub-Saharan Africa. ∎

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Minutes of the USF-AWB Strategic Retreat of December 5, 2017.

A meeting was held in Lyon on 5 December to review the interventions of USF over the past 18 months and to draw conclusions for the

future.

The meeting included the following persons:
• Robert Laurini, President of USF-AWB, former professor of information technology at INSA Lyon,
• Paul Rousset, Vice-president of USF, previously associate professor in economics at Lyon Lumiere University,
• Flemish Louis: Secretary of USF, honorary professor at INSA Lyon in Tribology,
• Christian Duhamel: Honorary associate professor in mathematics, Paris-Orsay University,
• Alain Jouandeau, treasurer of USF, former associate professor at INSA Lyon in business administration.
• Yves Frédéric Livian, honorary professor of management Sciences of Jean Moulin University,
• Alain Mille, webmaster of USF's website professor Emeritus at Claude Bernard University, and
• Gérard Panczer, professor of geomaterials at Claude Bernard University.

Firstly, Xavier Alphaize reported on his last exploratory mission to West Africa, during which he noted many country-based constants:
• Cohabitation of a public/private sector (approximately 150 to 200 establishments per country) developed in consideration of demography,
• Requests for support from both sectors mainly for the training aspects, but there are few research projections,
• Taking into account the quality criteria of the institutions: the CAMED and the Department for Higher Education of the Ministries,
• Contact and follow-up of files are done mainly by oral (no tradition of writing)
• Actions in Burkina Faso and Senegal ITECOM in Dakar supported by the French embassies.

Then Robert Laurini made a synthesis of two days, one on sponsorship and the other on international solidarity. Then, a study of the speech of President Emmanuel Macron given recently in Ouagadougou showed that the actions of USF-AWB in Africa fit well in this vision of higher education in Africa. It was agreed to continue the contacts.

During the afternoon, a SWOT analysis of the last interventions of USF was conducted. Without going into the details, it has led us to improve our procedures for announcing, selecting applications and monitoring interventions.

Various intentions for decisions have been taken, which will be presented at the next General Assembly which will take place on Tuesday, 20 February 2018, at 5pm, at the House of Solidarity of Lyon, France. ∎

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Post-docs in Taylor's University in Malaysia

CALL FOR GRADUATE RESEARCH STUDENT
Applications are invited for the post of Graduate Research Student for Flagship Research Grant Scheme "Data Analytics, Modelling and Visualisation" Project Duration: 3 years.

Travel Behaviour Modelling using Data from smart mobile applications

Brief of Project:
Kuala Lumpur exhibits all the characteristics of a congested city. Ever increasing road traffic leads to congestion that causes air pollution that affect human health. The car exhaust contains a number of greenhouse gasses that influences climate change. Malaysia has initiated several measures to combat this situation such as car-pooling, an improvement in public transportation as well as transport policies. However, these measures have not brought any significant improvement. The number of vehicles continue to increase. Smart mobility approaches hold the key in getting out of this vicious cycle. These approaches help cities in reducing traffic congestion; improve human health and make their cities green. Changes in attitudes and social behaviour are needed to support and implement new solutions and policies.

In this research, a study on current social behaviour of urban Malaysians towards the use of transport will be carried out. The study will include their perception towards transport and climate change, their travel habits, their choice of transport and the issues pertaining to transport and travel patterns. Information Technology will be used to help in this research, such as Big Data techniques will be applied to conduct the analytics. Data will be collected in two-folds: (a) Through an online survey and (b) Using Mobile device to track travel behaviour. All these data will be analysed using Big Data Techniques and a "Malaysian Urban Travel Behaviour" model will be conceptualised. Based on outcome of these

analysis, a framework will be proposed to drive smart mobility programmes in Malaysian Cities. Change in behaviour will be a key driver in creating Smart Cities. Mobile prototype Apps will also be developed to help Malaysian to change their travel behaviour. Information Technology will be used as one of the key tools when proposing the framework.

The expected outcomes of the project are the folllowing:

1. A model for "Travel Behaviou" among Malaysiam Urban Road Users
2. A framework to promote behavioural change among urban road users to improve traffic and pollution.

Designation:
PhD Student: 2 (Computer Science)
Master's Student: 2 (1 Computer Science and 1 Social Science)
Qualifications/ Requirements:
This project will require students to gather data from various sources, such as mobile apps, survey and through literature review. Computer Science candidates must be able to develop mobile apps and be able to learn Big Data analytics using Hadoop Ecosystem. Some knowledge in statistics is expected.

We are looking for candidates who have knowledge in algorithms, analysis, and modelling, analyzing and visualizing data using software tools with some experience in working with data from databases.

Programming knowledge in Python, C or Java would be preferred.

Stipend and Benefits:
Students are encouraged to apply for PhD scholarship (applicable for PhD students with 100% tuition fee waiver and RM 2500 monthly stipend) or Research scholarship (applicable for both Master's and PhD students with 75% tuition fee waiver and stipend). Refer to 'Postgraduate Funding' for eligibility, application and selection details for these scholarships. Successful candidates who do not qualify for the abovementioned scholarships will receive stipend of RM 1900-2500 per month (depending on the project budget).

Students will be enrolled in PhD (Computer Science) under the School of Computing and IT, and MSc (Computer Science) under the School of Computing and IT.

* Living expenses in Malaysia are much lower than in Europe. Students can rent a room near the university for RM 500 per month. RM 1500 per month is enough for a student to live around Kuala Lumpur.

Job Description for PhD Candidate:

Candidates with a Master's degree in Computer Science or related to Computing or any other equivalent qualification with a keen inclination to do research. Potential candidates should have knowledge in algorithms, algorithm analysis, modelling, analyzing and visualizing data using software tools with some experience in working with data from databases, and geographic information system. Successful candidates are expected to work towards their Doctoral degree and participate actively in research and publication with the group.

Job Description for Master's by Research Candidate:
Candidates with a Bachelor's degree in Computing or in the area of Science and Technology or related to Computing or any other equivalent qualification with a keen inclination to do research. Should have a CGPA of 3.0 or better. Preference will be given to candidates who have some knowledge in algorithms, modelling, analyzing and visualizing data using software tools, and good in programming using C, Java or Python.

Successful candidates are expected to work towards their Master's degree and participate actively in research and publication with the group.

Contact:
Interested candidates can directly contact Associate Professor Dr David Asirvatham with their CV and research proposal via e-mail (david.asirvatham@taylors.edu.my).
Dr. David Asirvatham
Head, School of Computing and IT,
Faculty of Built Environment, Engineering, Technology & Design,
Taylor's University,
Malaysia.

Spatial Big Data and IoT for Coastal Erosion, Floods Mitigation and Prediction

Brief of Project
The number of people living in coastal areas is continuously and rapidly growing. Combined with storms, floods and erosion, this has a strong impact on coastal populations, infrastructures and ecosystems. Strategies and solutions depend on the availability of datasets related to the topography, the meteorology and sea data (sea level, waves, currents, etc.). These data need to be combined and analyzed effectively in order to derive knowledge and prediction. Big Data and Internet of Things (IoT) technologies (devices and software) can help attain the objectives.

Big Data relates to the storage, processing and analysis of large volumes and varieties of data, in a fast and reliable manner. IoT relates to the real-time collection of data using sensors connected to servers. Spatial Big Data solutions combined with IoT will help predict and mitigate risks related to floods and coastal erosion. The expected outcomes of the project are the folllowing:

1) A methodology for analyzing and visualizing environmental data sets for coastal erosion and floods,
2) A methodology for integrating spatial big data sets, and spatial IoT development,
3) Two prototypes validating the approach and methodologies.
The project is going to be developed in collaboration with:
- National Univ. of Singapore,
- Univ. of La Rochelle, France,
- Univ. of Wales, Swansea, UK.

Designation
PhD students: 2
Master's by research students: 2
Specific Qualifications / Requirements
This project essentially involves gathering data from multiple sources, discover and combine data in mashups, learn about data model creation, explore, analyze and visualize spatial Big Data for predicting and mitigating risks related to floods and coastal erosion. The above task includes use of Cloud Storage, Sensors, IoT and Data Analytics. We are looking for candidates who have knowledge in algorithms, analysis, and modelling, analyzing and visualizing data using software tools with some experience in working with data from databases. Programming knowledge in Python, C or Java would be preferred.
Knowledge in Geographic Information Systems would be an added advantage.

Stipend and Benefits
Students are encouraged to apply for PhD scholarship (applicable for PhD students with 100% tuition fee waiver and RM 2500 monthly stipend) or Research scholarship (applicable for both Master's and PhD students with 75% tuition fee waiver and stipend). Refer to 'Postgraduate Funding' for eligibility, application and selection details for these scholarships. Successful candidates who do not qualify for the abovementioned scholarships will receive stipend of RM 1900-2500 per month (depending on the project budget).
Students will be enrolled in PhD (Computer Science) under the School of Computing and IT, and MSc (Computer Science) under the

School of Computing and IT.
* Living expenses in Malaysia are much lower than in Europe. Students can rent a room near the university for RM 500 per month. RM 1500 per month is enough for a student to live around Kuala Lumpur.
Job Description for PhD Candidate
Candidates with a Master's degree in Computer Science or related to Computing or any other equivalent qualification with a keen inclination to do research. Potential candidates should have knowledge in algorithms, algorithm analysis, modelling, analyzing and visualizing data using software tools with some experience in working with data from databases, and geographic information system. Successful candidates are expected to work towards their doctoral degree and participate actively in research and publication with the group.

Job Description for Master's by Research Candidate
Candidates with a Bachelor's degree in Computing or in the area of Science and Technology or related to Computing or any other equivalent qualification with a keen inclination to do research. Potential candidates should have knowledge in algorithms, modelling, analyzing and visualizing data using software tools, and good in programming using C, Java or Python. Successful candidates are expected to work towards their doctoral degree and participate actively in research and publication with the group Interested candidates can directly contact Professor Dr. Patrice Boursier (patrice.boursier@taylors.edu.my) or Associate Professor Dr. Raja Kumar Murugesan (rajakumar.murugesan@taylors.edu.my) with their CV and research proposal (2-5 pages) via e-mail.
School of Computing and IT, Faculty of Built Environment, Engineering, Technology & Design, Taylor's
University.