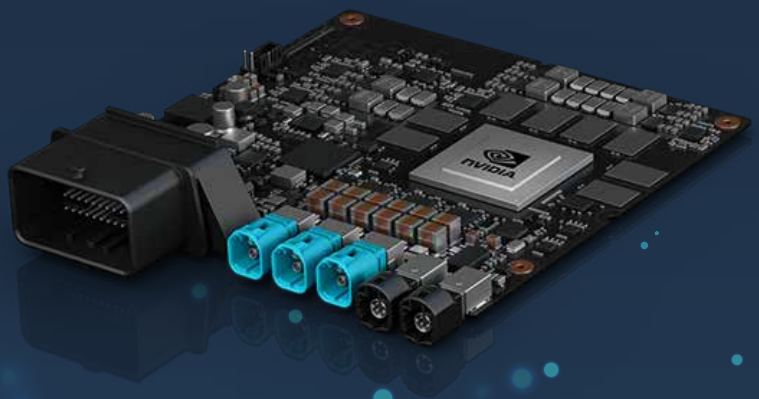
WORKSHOP

The MakerSpace Workshop on Distributed and HIGH PERFORMANCE COMPUTING AND ROBOTICS With

NVIDIA JETSON XAVIER

December 17 – 22, 2018 at FSSM, UCA, Marrakech



INSTRUCTORS

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Hajar MOUSANNIF

CONTACT

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PUBLICITY

Ayoub EL KATIBI
Hamza HAMDANI

PROGRAM AT A GLANCE

Timing	Monday 17th December 2018
08:30-09:00	***Welcoming participants***
09:00-09:30	***Introduction and opening***
09:30-10:00	**Keynote Speaker 1**
10:00-10:30	**Keynote Speaker 2**
10:30-11:00	**Coffee Break**
11:00-17:00	Session S-1

Timing	Tuesday 18th December 2018
Full Day	Session S-2

Timing	Wednesday 19th December 2018
Full Day	Session S-3

Timing	Thursday 20th December 2018
Full Day	Session S-4

Timing	Friday 21th December 2018
Full Day	Session S-5

Timing	Saturday 22th December 2018
Full Day	Session S-6

Keynote Speaker 1

PLENARY TALK

Francis DOMONEY, UK

Room: Amphitheater 10

Keynote Speaker 2

PLENARY TALK

Hajar MOUSANNIF, Cadi Ayyad University, Morocco

Room: Amphitheater 10

DETAILED PROGRAM

Session S-1: **Build your own Supercomputer (Practical Activity)**
Room: EC12

- The Wee Archie from EPCC in Edinbugh and the Beowulf Cluster from Uni Karlstadt.
- Upgrade to use the Odroid C2 processor to achieve speed and computing power.
- HPC certification and Woment in HPC.

Session S-2: **Distributed Computing (Practical Activity)**
Room: EC12

- The SMACK architecture for Real Time processing.
- Imperative and Functional programming languages.

Session S-3: **The GPU (Practical Activity)**
Room: EC12

- Paralellisation, Intermachine Communications in clusters.
- Deep Learning and the different processor architectures and accelerators.
- NVIDIA Xavier.
- Quantum computing.

Session S-4: **Machine Vision and Image Processing (Practical Activity)**
Room: EC12

- NVIDIA Software and Development kits.
- Two Days to a Demo.
- Huawei Chips and Software.
- Intel Chips and Software

Session S-5: **Robotics (Practical Activity)**
Room: EC12

- Starting an innovation Cluster and MakerSpace
- The MOOCs, The Simulation Packages.
- The five best teaching Robots.

- 3D print your own Robots.
- Reinforcement Learning.

Session S-6: **Advanced Robotics with NVIDIA XAVIER (Practical Activity)**

Room: EC12

- The Volta GPU.
- The Accelerators.
- The Development Kits.
- Coursera
  - Modern Robotics: Mechanics, Planning, and Control.
  - Robotics Specialization.
- 3D Print your own robot.
- Design your task and your assembly line.
- Sign Up to NVIDIA Developer. Sign up to Huawei Developer. Sign up to Intel Developer.
- Apply for scholarships.
- Robotic2019 in Bucharest.

BIOGRAPHY

Frank Domoney BSc MSc PG Dip(Economics) is a Big Data, Deep Learning, Spark and GPU Evangelist and actively promotes the use of the technologies where appropriate. He is familiar with Virtualisation and Cybersecurity Issues and has a role as a Skill Transfer Engineer specialising in Technology Evolution and Economic Development and integration with the EU programmes.

After a thirty year career building Fixed, Mobile and Converged Telecommunications Networks for Vodafone, Three and BT in UK, Germany, France, Kosovo, Moscow and Egypt he saw the massive disruption introduced by Big Data, Blockchain, High Performance Computing and Modern Manufacturing, in both technology and business and how they enable Smart Cities and offer enormous opportunity to people in the Developing World.

He was responsible for redesign of Fixed, Mobile, Data and Post Office Networks in Kosovo, and was Telecommunications Design Authority for the Red Sea resort of Port Ghalib and its multiplicity of hotels, villas, apartments and shops. He worked on rationalisation of four networks in Moscow and on Master-planning of major city districts in Saudi Arabia and UAE and their infrastructure including fibre networks and Smart Buildings while in Dubai.

Since then he has studied NoSQL Databases, Graph Databases and Processing, Cluster Engineering , Stream Processing and Spark deployment while registered as a student at University of Essex.

Frank is helping to develop a Masters Degree in Distributed and High Performance Computing with one of the professors at Cadi Ayyad University in Marrakech. This is combined with setting up an AI Centre of Excellence in Rabat. He is using his experience in the innovation cluster in Cambridge UK to introduce entrepreneurial activity in Morocco and intends to establish MakerSpaces across Morocco.

Frank has run a Deep Learning and Machine Learning workshop in Morocco and presented to the Moroccan Cyber Security Camp at ENSIAS. Deep Learning and Machine Intelligence can be applied to Cybersecurity very effectively. He is in discussion with one of the major UK universities about how they can extend their Cybersecurity program to Morocco. He is supporting one of his protégés in her PhD work on "Cybersecurity in 5G Networks" at the 5G Innovation Centre at University of Surrey.

Frank has learned ten languages in his lifetime but sadly is still only fluent in six. He has a passion for the reconstruction and transformation of North Africa Middle East and their integration in the EU economy. He has a great interest in the history of the Thirty Years War in Europe**.**

BIOGRAPHY

Hajar Mousannif is an associate professor and coordinator of the Master program in Data Science within the department of computer science at the Faculty of Sciences Semlalia (Cadi Ayyad University, Morocco). She holds a PhD degree in computer Sciences on her work on Wireless Sensor Networks and Vehicular Networks. She received an engineering degree in Telecommunications in 2005. Her primary research interests include Big Data, IoT, Human Computer Interaction, and next generation internet technologies. In addition to her academic experience, she chaired the Program Committee of many international conferences. Hajar Mousannif holds two patents on her work on Affective Computing and IoT and was selected among 5 best female researchers in North Africa. She received many international awards such as L'Oréal-UNESCO Award and the Emerald Litterati Prize for Excellence.