

## ***Presenter's biographies***

**9:15 – 9:30** – Welcome from **INSPER**

**Presenter:** Luciano Soares - INSPER

**9:30 – 10:00**

**Presenters:** Marcio Aguiar - **NVIDIA** & Esteban Clua - **UFF**

**Title:** **CUDA 8 and Pascal**

**Bio:** Esteban Clua is associated professor at Universidade Federal Fluminense, Rio de Janeiro, Brazil, coordinator of UFF Medialab and vice-director of the Computer Science Institute. In 2015 he was nominated as NVIDIA Fellow. His main research and innovation area are GPU Computing, Digital Games and Computer Graphics. He is one of the founders of SBGames (Brazilian Symposium of Games and Digital Entertainment) and was the president of Game Committee of the Brazilian Computer Society from 2010 through 2014.

**10:00 – 10:40**

**Presenter:** Cristina Nader Vasconcelos - **UFF**

**Title:** **The Revolution of Deep Learning with NVIDIA DIGITS**

**Talk abstract:** The purpose of this talk is to provide a comprehensive introduction to Convolutional Neural Networks (CNN) and their training using the NVidia DIGITS tool (version 4). With this goal, a parallel will be presented between deep learning approaches versus classical signal processing pipelines and the basic concepts of neural networks. For motivation, many applications will be presented based on the fundamentals presented.

**Bio:** Cristina Nader Vasconcelos is Associate Professor, Department of Computer Science UFF. Obtained her PhD from PUC-Rio in 2009 and currently conducts research in the areas of Computer Vision, Pattern Recognition, Image Processing and Computer Graphics. Since 2015 she has been working in professional training and development solutions based on deep learning.

**10:40 – 11:20**

**Presenter:** Luiz Vitor Martinez - **Geeksys** – *NVIDIA ECS2015 Finalist*

**Title: Building a global scale company using NVIDIA GPUs**

**Talk abstract:** Physical retail stores are nowadays struggling to compete and understand who are the customers and how they behave with products and store environment. A new industry, called Retail Analytics, has emerged last years to answer those questions. At GeekSys we have been developing sensors, algorithms and statistics models to make retail stores measure, understand and react to customer behaviour changes in near real-time. At this presentation, we will go showcase the underlying technologies and also talk about entrepreneurship and company building.

**Bio:** A passionate entrepreneur, graduated both in computer and electronics engineering, multiple & internationally awarded, nominated as one of the most creative and innovative entrepreneurs in South America and that has already built 4 companies at 27 years old. By presenting a holistic entrepreneurial vision, he is able to go from very technical to customer sales and company strategy.

**11:30 – 12:10**

**Presenter:** Edgar Gadbem – **Eldorado Institute**

**Title: Developing visual computing solutions at Eldorado Institute with the help of GPUs**

**Talk Abstract:** At this talk we'll take a look into some results and lessons learned from developing innovative solutions in the visual computing area at Eldorado Research Institute. We'll cover Machine Learning solutions to help with image based diagnosis, the use of Virtual Reality in training and data visualization and how GPUs are helping us tackle these problems.

**Bio:** Project Manager of innovative software projects in the areas of Virtual Reality, Image Processing, Computer Vision and Machine Learning. Previous background in Computer Graphics for games and high performance GPGPU programming using CUDA. Former professor of Computer Graphics, Artificial Intelligence and Game Engines at PUC – Campinas.

**13:50 - 14:30**

**Presenter:** Nelson Inoue – **PUC-Rio** – GTEP Group

**Title:** **GPUs for speeding up Reservoir Geomechanical Analysis in the Petroleum Industry**

**Talk abstract:** We have a research project with Petrobras (Brazilian Energy Company) in which a finite element code on GPU has been implemented to speed up stress analysis (geomechanical analysis) of a partial coupling analysis (hydromechanical analysis) of petroleum reservoir. The performance of a finite element program can be improved in two ways: (i) by means of optimized parallel algorithms and/or (ii) through hardware with greater processing power. Clearly, the maximum performance is achieved when these two premises are implemented in a program. Thus, the implementations of the assembly of the global/element stiffness matrix, solution of the system of linear equation and evaluation of stress and strain state on multi GPUs system aimed at achieving these two premises, that is, not just brutal force using the GPU through the large number of processing cores, but to develop implementations of new algorithms.

**Bio:**

Graduated in Civil Engineering from Federal University of Ouro Preto (1995), MSc degree in Civil Engineering from Pontifical Catholic University of Rio de Janeiro – PUC-Rio (1998) and PhD in Civil Engineering from PUC-Rio (2005).

Currently he is a Senior Researcher and Professor at PUC-Rio. The Researcher has worked in numerical analysis, especially in Reservoir Geomechanics with Cenpes-Petrobras,

The Researcher has developed and implemented a finite element code on GPUs (for speed up the stress analysis) and a partial coupling program between a stress analysis program and a reservoir simulator.

**14:40 - 15:00**

**Presenter:** José Augusto Stuchi - CPqD

**Title: Audio Processing Using Neural Networks Convolutional**

**Talk Abstract:** The speaker will talk about neural models training used for voice recognition activity. Convolutional neural networks are trained using Caffe and NVIDIA DIGITS framework. After its training, these models are used to perform audio's segmentation. In this context, image processing techniques are adapted for processing speech signals achieving state of the art results.

**Bio:** José Augusto Stuchi is a researcher at CPqD, developing new methods and solutions in the areas of Computer Vision, Image Processing and Audio and Machine Learning. Owns a degree in Computer Engineering with emphasis in Embedded Systems from the University of São Paulo (2009), master's in Electrical Engineering from the University of São Paulo (2013), MBA in Business Management from Getulio Vargas Foundation (2015) and is currently a PhD in Electrical Engineering at the University of Campinas in machine learning area.

**15:00 – 15:20**

**Presenter:** José Eduardo de Carvalho Silva – CPqD

**Title: Acoustic Models in Parallel Computing Environment**

**Talk Abstract:** The speaker will talk about the training of acoustic models for the Portuguese spoken in Brazil, in an environment with NVIDIA GPU's, focusing on the development of a generic speech recognition system.

**Bio:** José Eduardo de Carvalho Silva's degree in Electrical Engineering (2008) and Masters in Computer and Telecommunications Engineering (2010) from the Federal University of Minas Gerais (UFMG). Fellow in Telecommunications at ESIEE-Paris / France for a year. It has experience in digital processing area signals acting on the following topics: speech synthesis, speech recognition, training acoustic models and natural language processing.

**15:50 - 16:30**

**Presenter:** Pablo Bioni - **TV Globo** VFX Team

**Title: Thinking outside the box for VFX roadmap and Evolution for content production**

**Talk Abstract:** At this talk, we'll talk a little about the evolution of VFX in the world and focus in how we need to migrate the Hollywood workflow and quality to one with less budget but keeping the high quality. As soon we understand how we could achieve that, we should also know how to predict the future and be prepared to focus on new solutions and approaches.

**Bio:** Researcher, VFX Supervisor and Innovation Head for Visual Effects, Pablo is a former computer engineer with master degree in Image Processing at PUC-RJ. With main focus on innovation, and technology roadmap prediction. Has been part of R&D team of academic labs, and worked in Europe with famous vfx teams, for virtual accidents. Today, Bioni is the VFX R&D Head at GLOBO, and member of ACM, SMPTE and Visual Effects Society.

**16:40 - 17:20**

**Presenter:** Luis Gonzaga Jr. – **UNISINOS**

**Title: NVIDIA VRWORKS/ GAMEWORKS SDK**

**Talk Abstract:** VRWorks™ and GAMEWorks™ are a comprehensive suite of APIs, libraries, and engines that enable application and headset developers to create amazing virtual reality experiences.

**Bio:** Luiz Gonzaga Jr is currently Adjunct Professor at UNISINOS University, where he heads the Advanced Visualization Laboratory - VIZLab, focused in innovative visualization technologies. His interest areas include computer graphics, computer vision, immersive visualization and analytics, interaction in immersive virtual reality and GPU programming.