George Kopanas

Work Experience

INRIA
GraphDeco Group
Sophia-Antipolis, France

PhD Student December 2019 - Still Active.

Supervisor: George Drettakis, george.drettakis@inria.fr

ARM
Media Processing Group
Cambridge, United Kingdom

Software Engineer September 2016 - December 2019. I worked as part of the Mali GPU SWE team. More precisely I was part of the team that is responsible for creating a non-intrusive way to capture any activity of the GPU drivers that are relevant to the user. This information is used for optimizing applications and monitoring the activity of the GPU.

INRIA
GraphDeco Group
Sophia-Antipolis, France

Research Engineer March 2016 - September 2016. We developed a software system that renders highly realistic views of a scene, a link to subsequent structure from motion and multi-view stereo reconstructions based on the images rendered. The goal was to generate ground truth data for deep learning applications in which obtaining data-sets manually is not possible.

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INRIA
GraphDeco Group
Sophia-Antipolis, France

Internship Sept 2015 - Dec 2015. We developed a method of texture synthesis by example which we then optimized for performance via GP-GPU programming. Deep Learning was used to predict the parameters required for the generation of textures by example.

Supervisor: George Drettakis, george.drettakis@inria.fr

SRI International
Visual Technologies Group
Princeton, NJ, United States

Student Associate June 2015 - Sept 2015. We developed an algorithm that was using Deep Learning techniques for detecting dominant moving objects in a video scene. The main novelty was exploiting temporal and spatial information for automatic generation of the training data and for detecting candidates which then where provided to the cNN for classification.

Manager: Sek Chai, sek.chai@sri.com

Education

2016 Diploma (5-year B.S./M.S. degree) in Computer and Communication Engineering, **University of Thessaly**, Volos, Greece

Side Projects

Feb 2019 - July 2019 **Adobe Lightroom Plugin:** Deep Learning plugin for image developing.
Fields: Deep Learning and Image Processing

Post-processing image editors that work on massive catalogues for editing pictures with Adobe Lightroom spend the majority of their time adjusting the White-Balance controls but in the same time every editor has a specific style that matches all of his pictures to a very distinct white balance. This plugin is using a convolutional neural network to adjust the values of the White-Balance based on the style of the specific editor since we are using his previous work to train the model. Future expansion is to train the model ad-hoc every time the editor exports the pictures and to adjust more values except White Balance.

Side Projects

June 2014 - March 2015 — **Implementation of Edge-based Method for Sharp Region Extraction From Low Depth of Field Images**

Fields: Image Processing and Machine Learning

This algorithm proposes a method for extracting blur/sharp regions of interest (ROI) that benefits from using a combination of edge and region based approaches. It can be considered as a preliminary step for many vision applications tending to focus only on the most salient areas in low depth-of-field images. During this project emphasis was given on real-time implementation.

April 2014 - June 2014 — **Implementation of Parallel Human Detection algorithm (HOG) with verilog in FPGA**

Fields: Computer Vision and Machine Learning

pHOG is a parallel implementation of the histogram of oriented gradients algorithm for object detection, using the NVIDIA's CUDA parallel computing architecture. During the project we implemented the former algorithm on fpga devices, written in Verilog, HDL.

Master Thesis

Subject: Simulation Infrastructure for the Study of Performance / QOS / Energy Efficiency Trade-offs.

In order to study the effects of timing faults on various applications caused from under-volting CPU cores, we have developed such a framework on top of Gem5, a state-of-the-art open source modular computer system simulator. We created a tool which dynamically injects faults under realistic probabilities throughout the pipeline of ARM architectures.

Publications & Awards

March 2016 — D.Zhang, G.Kopanas, C.Desai, M.Piacentino, S.Chai. "Unsupervised Underwater Fish Detection Fusing Flow and Objectiveness", WACVW 2016.

February 2017 — 2nd place: TeamARM 2017 Global Graduate Challenge: "Micro:bit Application"

Languages

Greek:	Excellent
English:	Excellent
German:	Novice

Technical Skills

Programming Languages:	C, C++. Python, Java, MIPS Assembly
Parallel Programming Languages & Libraries:	OpenCv, OpenGL, CUDA, OpenCL, OpenMP, MPI
Hardware Description Languages:	Verilog
Mathematic Languages:	MatLab
Scripting & Markup Languages:	LaTeX, HTML, MaxScript
Operating System:	Linux, Windows
Other:	Flex, Bison, Microsoft Visual Studio, Eclipse, Vtune, Nvidia Visual Profile Git

Interests and Activities

Technology, Open-Source, Programming, Computer Architecture, Mountaineering, Photography