# Stephen Paul Ierodiaconou

**PhD, MEng**

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DOB: 14/11/83
Nationality: British

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Enthusiastic doctorate graduate with expertise in the field of image and video processing but interested in many facets of technology. Careful and diligent, always studying new techniques and technologies to improve quality and productivity. Passionate about FOSS and regular contributor. Looking for challenging work in an innovate and lively technology company.

## Skills

- ● Image processing, wavelets, texture analysis & synthesis
- ● PHP & SPL, Objective-C/C
- ◐ Objective-J/JavaScript, HTML, CSS, SQL
- ● Codec standards
- ● MATLAB
- ◐ Java, Python, C++

[**Tools**] git, GNU tools, LaTeX, MySQL, Apache

[**Natural Languages**] *Native*: English, Greek, *Passive*: French, Italian

## Experience

### ► University of Bristol, UK (2011 - on-going)

- Contracted till early June 2011 to create a teaching aid, demonstrating principles/algorithms in image/video compression. MATLAB implementation of JPEG and an H.263-like video codec with GUI for user interaction (w. MATLAB, OO principles, specs, GUI design).

### ► Architecture 00:/ Ltd, London UK (2010 - 2011)

- Email/Web server maintenance, consulting on web technologies, internal web application development using Cappuccino (w. JavaScript, Debian, Apache, MySQL).

### ► PhD Projects/Signal Processing, University of Bristol, UK (2006 - 2011)

- Design and implementation of portions of an image compression scheme using texture replacement where perceptually similar synthesised textures are used to in-fill image regions resulting in significant bit-savings. Uses techniques in image segmentation, texture defect detection, texture similarity analysis using complex wavelets, texture synthesis, human perceptual redundancy and image compression (w. MATLAB, C/C++, collaborative development/research).
- Design and implementation of a texture synthesis technique using multi-agent optimisation. A spatial model of the texture image is extracted and used to generate an initial placement of texture patches on a output lattice. Each placed patch is then modelled as an agent in a evolutionary environment. The spatial model, the agent neighbourhood, HVS models and a set of environment rules are then used to optimise the placement and position of agents (w. MATLAB, C/C++).
- Experience with image and video compression standards (JPEG, JPEG2000, MPEG-7 Visual, MPEG-(2/4), H.264) and image processing techniques (wavelet schemes, morphological operations, clustering, texture feature extraction).

### ► Panasonic PSDCE, Bristol UK (2006)

- C++ for embedded processor tool chain. Utility to calculate approximate power usage of ASIC using simulation data (w. STL, RegExp, Tcl/Tk).

► **University of Bristol, UK** (2002 - 2010)

- Various inc. laboratory demonstrator, assistance at fairs, phone operator (w. social interaction, communication and team coordination).

► **Open Source Projects & Contributions** (2000 - on-going)

- **Objective-PHP & Moka [http://github.com/stevegeek/moka]:** Concept, design and implementation of a port of the Objective-C language syntax, runtime and Cocoa framework to PHP (w. OO design, PHP5+, parsers, shell, documentation, unit testing, in-depth knowledge of PHP/Objective-C).
- **Cappuccino Web Framework [http://cappuccino.org]:** Implementation of framework classes (including decimal number support and colour lists), bug fixes and documentation (w. collaborative development, OO design, Objective-J/Javascript, documenting, unit tests, git).
- **Other GitHub repositories [http://github.com/stevegeek]:** Including my *10K Apart* 2010 entry (Frequency Domain Nodal Analysis Tool), LaTeX templates (e.g. this CV), a new proposed MATLAB syntax and more.
- **Other notable contributions [http://sf.net]:** Arianne RPG (2002 - 2005) and AnyToAny (2000) (user 'thriceforged').

Notable website development (w. PHP5, HTML, CSS, JS): [http://www.ubuphotosoc.co.uk] (2007 - 2009), including event booking, payment processing w. Paypal and Flickr API.

## Education

► **PhD in Signal Processing from the University of Bristol** (2006 - 2011)

- **Title**: "*Content Based Image Compression Using Texture Analysis and Synthesis*"
- Specialised in: image compression, texture analysis using complex wavelets, human visual system redundancies, texture similarity measures, texture synthesis.

► **MEng Electrical and Electronic Engineering (1st Class)** (2002 - 2006)

- Modules including: Advanced Computer Architecture, C Programming, Image & Video Coding, Digital Filters & Spectral Analysis, Mathematics, Neural Networks
- Final Year Research Project with BT Exact (now BT Innovation): Developing an embedded component to a video surveillance system using a Digital Signal Processor and RTOS (w. C/assembly). Resulting in conference publication and prize.

**Publication list**: [http://www.stephenierodiaconou.com/publications] inc. image compression, texture synthesis and video processing on embedded platforms.

**Awards**: *IEEE Communications Chapter Prize*: awarded for MEng final year project. *UoB Research Reception 2008*: First Prize for research project.

**School**: Campion, Athens. A-Levels (AAA): Maths, Physics, Economics. IGCSEs achieved 9 (A* - B). Graduated with Distinction.

## About Me

Avid traveller passionate about multi-cultural experiences. Hobbies include mountain-biking, electronics & FOSS.

## References

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