CURRICULUM VITAE

DR. IOANNIS (YANNIS) DOUROS

Tel: +44 (0) 7841 829265 | e-mail: yannis@douros.org

Software engineer with over 20 years' experience in the computer vision, AI, mobile computing and finance sectors, founded on a solid Computer Science background (3D Human Body Modelling and Machine Vision) with a strong numerical and mathematical foundation. I code mostly in modern C++ but also have experience with Python, SQL, C#, plus exposure to other tools and languages that I have picked up along the way. I am enthusiastic about problem-solving challenges outside my comfort zone; value robustness and attention to detail; and always enjoy seeing the output of my work becoming part of a well-engineered, production-grade solution.

WORK EXPERIENCE

Jan 2021 – present

Computer Vision, Machine Learning and AI Engineer (Self-Employed): Designing and developing machine learning system solutions for clients on a contract basis. Emphasis on application related to understanding and modelling human bodies, faces and voice, as well as rooms and buildings. Notable clients:

- **4Roads** – Geometric and semantic reconstruction of rooms and buildings for the purposes of assessing heat losses and designing energy-efficient heat pump solutions.

- **Salina Health** – Applied AI for facial expressions and voice analysis for support of mental health assessment and drug discovery.

Jan 2020 – Dec 2020

On a planned career break in Greece. Dealing with family business (property management and maintenance, agricultural work). Continuous training on Machine Learning and Deep Learning.

Jan 2018 – Dec 2019

Senior Computer Vision R&D Engineer, Cubic Motion Ltd: Member of the R&D team, based in Pinewood Studios, London. Development, testing, integration, and performance improvement of facial feature detection/tracking algorithms for the company's facial animations product offerings; development of performance and regression testing for the core libraries. Ad-hoc applied research for on-demand provision of solutions required as per product requirements; close liaison with the Product Development and internal Production teams for requirements and solution design; support and maintenance of the core algorithms' code base.

Jan 2016 – Jan 2018

Senior Human Body Modelling Engineer, Metail Ltd: Member of the Visualisation Team, working on projects related to the back-end development of the 3D mesh fitting pipeline (triangulated model to point cloud from scanner data) and the garment visualisation pipeline, in frequent collaboration with the company's R&D Team. The role involves problem solving in the domain of complex 3D object representation and simulation. It is a combination of mathematical modelling and software engineering in an agile, test-driven environment. It also involves significant refactoring for performance optimisation, thread safety and cross-platform deployment.

May 2007 – Oct 2014

Royal Bank of Scotland – Global Banking and Markets:

April 2014 – October 2014: Software Developer, Equity Derivatives Technology Projects: Design and development of Risk Transfer tools and feeds within the framework of the run-off project arising from the sale of the bank's Equities business.

July 2012 – March 2014: Software Developer, Risk and Valuations Technology: Member of the technology team in charge of the development of the risk reporting platform. Development and maintenance of the Equity Derivatives grid based system for pricing risk metrics (i.e. Greeks), and delivery of risk-related feeds (Risk, PnL Attribution, etc.) to the Finance, Ventures and Market Risk businesses.

May 2007 – June 2012: Quant Developer - Equity Derivatives Technology: Member of the Equity Derivatives group, working directly with the Front Office and with the Quant Analytics team. Full lifecycle development of the in-house Structured Exotics Deals creation and pricing platform: Native structuring interface for the platform (Excel/VBA); interface to quant analytics

code libraries; interface with third-party front-end applications that handle the booking of deals and the risk assessment and reporting; interface to market data sources/databases; Monte Carlo model pricing using grid computing. In charge of: platform delivery; development and maintenance of the overnight regression testing framework; the maintenance of the server-side infrastructure associated to the Structured Deals platform. Front office user support.

July 2004 – Apr 2007	**Software Engineer, Symbian Software Ltd.** – Member of the Converged Communications Team. Multithreaded Client/Server architecture programming of the kernel and APIs of Symbian's embedded operating system:

- Full software development lifecycle for Product Requirements and Engineering Changes in the areas of Telephony Services and Baseband Adaptation.

- Maintenance, Defect Fixing, Code Reviews and Test Code Improvements.

- Master Code Line Integration (rota on Subsystem Release Engineer role).

- Training and mentoring of new (graduate) starters and Bangalore Office Staff.

July 2001 – Jun 2004	**Founder and Director, SomaVision Research Services Ltd.** – Providing research and development consultancy services in the area of 3D Human Body Modelling and Shape Analysis Research.
Sep 1998 – Apr 2004	**Research Fellow, Computer Science Department, University College London** (Vision, Imaging and Virtual Environments Group). Modelling and representation of the human body for medical and apparel applications, using data from 3D scanning hardware. Involvement in a series of projects funded by the Wellcome Trust, the Dept. of Trade and Industry (DTI), and the EU Commission. The post consisted of a combination of roles involving:

Research (applied maths, 3D graphics, surface reconstruction, curvature modelling, feature detection)

Development (C++ prototyping and interface development)

Management (project proposal authoring and budgeting, workpackage technical lead, scientific co-ordinator between partners, and liaising with sponsors/clients, both domestic and international – mostly from Japan, China, and the EU).

1996 - 1997	**Research Fellow, NTUA** (National Technical University of Athens). Development of interactive Geographical Database (GIS) systems. The post involved a combination of software development, data management and liaison roles.

EDUCATION

1998 – 2004	**PhD in Three-Dimensional Human Body Modelling**, Department of Computer Science, University College London. Thesis title: Calculating Curvature Shape Characteristics of the Human Body From 3D Scanner Data.
1997 – 1998	**MRes in Computer Vision, Image Processing, and Graphics**, Department of Computer Science, University College London. Research Project on construction of human body models from 3D scanner data. Graduation mark: Distinction.
1992 – 1997	**BSc in Information Technology**, Department of Informatics, University of Athens, Hellas. Final year project on Geographical Database Systems. Areas of knowledge covered: Theory of Computer Science, Information Systems and Applications, Telecommunications. Graduation mark: 7.51/10.

AFFILIATIONS, MEMBERSHIPS AND QUALIFICATIONS

- Accredited Symbian Developer (ASD) - awarded January 2006
- Member of the Institute of Electrical and Electronics Engineers (IEEE), and the IEEE Computer Society – 2001 to 2013
- Member of the British Machine Vision Association (BMVA) – from 2000 to 2011

COMPUTING EXPERIENCE

Platforms and Ecosystems	Windows, Linux, NVIDIA Jetson
Programming Languages	C++ (11 onwards), Python (inc. NumPy/TensorFlow/Keras), Matlab/Octave, SQL
Tools and Libraries	Git (GitHub/SourceTree), SubVersion, CMake, Docker, dlib, OpenCV, CUDA, Intel VTune Amplifier, Blender, MeshLab, Colmap, NerfStudio

TRAINING – COURSES

- TensorFlow Developer – Professional Certificate (Coursera / deeplearning.ai, October 2022) – Certificate here.

- Deep Learning - Specialization (Coursera / deeplearning.ai, January 2021) – Certificate here.

- Machine Learning (Coursera / Stanford Online, June 2020) – Certificate here.

- Java and the Spring Framework (QA, April 2014)

- GridServer Developer Training (DataSynapse, November 2007)

- Option Pricing and Risk Management (ENB Consulting, October 2007)

- Option Fundamentals (ENB Consulting, October 2007)

- WCDMA Protocol Stack Including SIP and the IP Multimedia System (Imagicom, May 2006)

- Process Mapping with UML (Dunstan Thomas, November 2005)

- Advanced Source Control using Perforce (Vaccaperna, May 2005)

- Symbian OS: Internals (Symbian Software Ltd., May 2005)

- Symbian OS: Essentials (Symbian Software Ltd., July 2004)

- C++ Programming for Developers (QA, June 2004)

PUBLICATIONS

- Douros I., "Symbian OS C++", in *"Symbian OS C++ for Mobile Phones – Vol. 3"*, edited by Richard Harrison and Mark Shackman, Wiley 2007, ISBN 978-0-470-06641-6.

- Douros I., "Objects - Memory Management, Cleanup and Error Handling", in *"Symbian OS C++ for Mobile Phones – Vol. 3"*, edited by Richard Harrison and Mark Shackman, Wiley 2007, ISBN 978-0-470-06641-6.

- Douros, I, "3D Scanning State-of-the-Art: Technologies, Trends and Applications Within and Beyond the Clothing Industry", Proceedings of the Workshops on 3D Scanning and Virtual Try-On Systems, Donghua Fashion Forum of Shanghai International Fashion Festival, China, March 2004.

- Kartsounis, G., Douros I., Treleaven, P.C., "BodyXML - An XML-based High Level Representation Framework of Human Bodies", 3D Modelling 2003 Proceedings, Paris, April 2003.

- Ruiz M., Buxton, B.F., Douros I., Treleaven, P.C., "Web-based Software Tools for 3D Body Database Access and Shape Analysis", Scanning 2002 Proceedings, Paris, May 2002.

- Douros I., Buxton B.F., "Three-Dimensional Surface Curvature Estimation using Quadric Surface Patches", Scanning 2002 Proceedings, Paris, May 2002.

- Buxton B., Dekker L., Douros I., Vassilev T., "Reconstruction and Interpretation of 3D Whole Body Surface Images", Scanning 2000 Proceedings, Paris, May 2000.

- Wells J.C.K., Douros I., Fuller N.J., Elia M., Dekker L., "Assessment of body volume using 3-dimensional photonic scanning", Ann. N.Y. Acad. Sci. 2000, v904, pp247-54.

- Dekker L., Douros I., Buxton B., Treleaven P., "Building Symbolic Information for 3D Human Body Modeling from Range Data", 3DIM99 Proceedings, pp388-397, Ottawa, Canada, October 1999.

- Douros I., Dekker L., Buxton B., "An Improved Algorithm for Reconstruction of the Surface of the Human Body from 3D Scanner Data Using Local B-spline Patches", mPeople Workshop Proceedings, IEEE-ICCV99, pp29-36, Corfu, Hellas, September 1999.

- Douros I., Dekker L., Buxton B., "Reconstruction of the surface of the human body from 3D scanner data using B-splines", SPIE proceedings vol. 3640, pp234-245, San Jose, California, January 1999.

OTHER QUALIFICATIONS, SKILLS AND INTERESTS

Languages	Greek (native)
	English (fluent - 1997: Cambridge Certificate of Proficiency in English)
	German (intermediate - 1994: Zentrale Mittelstuffenpruefung auf die Deutshe Sprache)
	Japanese (basic - 1995: Certificate of Japanese Language Proficiency - Level 4)
Driving	Full UK Driving License.
Other	Photography: Diploma in Photography, Institute of Photography UK, awarded March 2015.
	Martial Arts: Wing Chun Kung Fu street self-defence Level 2, Sifu Andrew Sofos Martial Arts Academy (2000-2001). Student of the United Kingdom Wing Chun Kung Fu Association (2001-2003) – Intermediate Level. South Wing Chun Association (2013 – present)
	Other activities and interests: Agriculture, Photography, Hiking, Mountaineering, Running, Skiing, Fencing, Music, Travelling, Literature, History, Environmental Issues, Real Estate.
	Registered NHS Blood and Organ Donor.