# CURRICULUM VITAE


## DR. IOANNIS (YANNIS) DOUROS

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


I am a software engineer with several years of experience in the computer vision, machine learning and AI sectors, as well as in mobile computing and finance; 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++ and Python, but also got plenty of 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.

## TECHNICAL EXPERTISE

| | |
|---|---|
| Technologies | Computer Vision, Machine Learning, Deep Learning, Surface Reconstruction, Shape Analysis, Object Detection, Motion Tracking, Convolutional Neural Networks, Generative Adversarial Networks, Neural Radiance Fields, Gaussian Splatting |
| Programming Languages | C++ (11 onwards), Python (inc. NumPy/TensorFlow/Keras/PyTorch), Matlab/Octave, SQL |
| Tools and Libraries | Git (GitHub/SourceTree), SubVersion, CMake, Docker, dlib, OpenCV, OpenCL, CUDA, Intel VTune Amplifier, Blender, MeshLab, Colmap, NerfStudio, DeepFaceLab |
| Code examples | https://github.com/idouros |

## 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 applications related to understanding and modelling human bodies (surface reconstruction, skeleton fitting, posing, skinning), faces (feature tracking, animation) and voice, as well as rooms and buildings (Neural Radiance Fields, Structure-from-Motion, Gaussian Splatting). Notable clients:

- **2024 - present: Moptil** – Implementation of a user friendly yet high-quality and realistic deepfake video production platform. *Technologies Used: Python, DeepFaceLab.*
- **2022 - 2023: 4Roads** – Geometric and semantic reconstruction of rooms and buildings for the purposes of assessing heat losses and designing energy-efficient heat pump solutions. Used a combination of photogrammetry, structure-from-motion, NERF modelling and CNN-based object detection to generate an accurate and to-scale 3D representation of an indoor area and its thermal elements, using only a mobile phone handset for data capture and no specialized equipment required. *Technologies Used: Python, NumPy, OpenCV, Open3D, MeshLab, COLMAP, NerfStudio, YOLOv5 (ImageAI).*
- **2021-2022: Salina Health** – Applied AI for facial expressions and voice analysis for support of mental health assessment and drug discovery. Prototyped a system for collecting facial expression and voice data from users as they describe their mental state through a DASS questionnaire for the purpose of modelling the relationship between vocal and facial elements (active shape models) with levels of anxiety, depression and stress. *Technologies Used: C++, Python, NumPy, TensorFlow, OpenCV, SciKit, Pandas, Docker, AWS, HTML5, Edge Computing (NVIDIA Jetson and NVIDIA AI).*
- **2021: Yokai** – Composite photography. Superimposition of user's 3D avatar and simulated garments on existing natural photograph background. *Technologies Used: Python, Blender, SMPL, PyTorch, Houdini.*

| | |
|---|---|
| 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. *Technologies Used: C++, OpenCV, dlib, Maya, MATLAB.* |
| 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. *Technologies used: C++, Python, Ruby, Blender, MeshLab.* |
| May 2007 – Oct 2014 | **Royal Bank of Scotland – Global Banking and Markets:**<br>April 2014 – October 2014: Software Developer, Equity Derivatives Technology Projects<br>July 2012 – March 2014: Software Developer, Risk and Valuations Technology<br>May 2007 – June 2012: Quant Developer - Equity Derivatives Technology |
| July 2004 – Apr 2007 | **Software Engineer, Symbian Software Ltd.** |
| July 2001 – Jun 2004 | **Founder and Director, SomaVision Research Services Ltd.** |
| Sep 1998 – Apr 2004 | **Research Fellow, Department of Computer Science, University College London** |

## EDUCATION

- **PhD in Three-Dimensional Human Body Modelling**, Department of Computer Science, University College London.
- **MRes Computer Vision, Image Processing, and Graphics**, Department of Computer Science, University College London.
- **BSc Information Technology**, Department of Informatics, University of Athens, Hellas.

## TRAINING – COURSES (most recent/relevant)

- Generative Adversarial Networks – Specialization (Coursera / deeplearning.ai, August 2024) – Certificate here.
- 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.

For the full training history, as well as a list of publications, please visit www.douros.org

## OTHER QUALIFICATIONS, SKILLS AND INTERESTS

| | |
|---|---|
| Languages | Greek (native), English (fluent), German (intermediate), Japanese (basic) |
| Driving | Full UK Driving License. |
| Other | Photography, Martial Arts, Agriculture, Environmental Issues, Real Estate Investments.<br>Registered NHS Blood and Organ Donor. |