

GKAMAS Theodosios, Ph.D.

Thessaloniki, GREECE

16 May 1985

Personal Website: ispscientist.wordpress.com



SENIOR AI/ML RESEARCHER / SENIOR SOFTWARE ENGINEER (R&D)

PERSONALITY & AMBITIONS:

- Hard working, multitasking, self-organized, driven by results, devoted to his tasks.
- Enjoys being a member of a multidisciplinary and multicultural team, where innovative ideas can arise through fruitful discussions and brainstorming.
- Enthusiastic to see his efforts being directly applied to our daily lives.
- Looking forward to participating in R&D projects.
- Always interested in learning new skills and techniques, and equally positive to share his wisdom with his colleagues and thoughtful young scientists who deserve it as being our future.

QUICK OVERVIEW:

- 7 years of experience on designing and developing ML systems. Having implemented and deployed a variety of ML pipelines
- Excellent software development and scripting skills Python (6 years) and very good in C/C++ (3 years).
- Real-time processing of signals, images and videos
- Hands-on experience, ML libraries (e.g., Scikit-Learn, TensorFlow, Keras), Computer Vision (e.g. OpenCV) and micro-service architectures (e.g., Docker), 2 years of expertise in Deep Learning (CNNs, RNNs, GRUs, LSTMs).

TOPICS OF EXPERTISE:

Signal and image processing, machine learning, pattern recognition, artificial/computational intelligence, computer vision, deep learning, medical signal/imaging, classification/regression/clustering, statistical modelling & analysis, face detection & recognition, object detection, activity detection & recognition, anomaly detection, SVM, Random Forests/Trees, permutation testing, Monte Carlo simulations etc.

TOPICS OF FURTHER INTEREST:

Healthcare industry, Bio-medical analysis, Natural Language Processing (NLP), GPU processing (CUDA, TensorFlow, Keras), Deep Learning (Theano, Caffe, Pytorch) etc.

PROFESSIONAL SKILLS:

- Operating Systems: Linux (*Ubuntu, Debian*), Unix (*Solaris*), Mac OS, Windows.
- Programming languages: Python/Cython, MATLAB, C, C++, Objective C ~ *Basic notions*: Java, R.
- Web concepts: HTML, PhP (basics).
- Development Tools: Xcode with Cocoa Library (*for the development of applications for Mac OS*), Wordpress.
- Medical tools : FSL toolkit, MedINRIA.

PROFESSIONAL EXPERIENCES (*):

- October 2015 - nowadays: **ML, AI, PR, ISP Research/Software Engineer**
Freelance
Keywords: Artificial Intelligence, Machine Learning, Computer Vision, Pattern Recognition, Signal/Image Modelling & Processing, Data Analysis, Variational Inference, Bayesian Inference, Gaussian Mixture Models, Support Vector Machines, Random Forests. OpenCV, Python, numpy, scipy, panda, matplotlib, mayavi, scikit-learn, MATLAB/Octave, C/C++, Mentoring of undergraduate & postgraduate students.
- July 2020 - November 2020: **Research Lead Machine Learning Engineer**
Gnomon Informatics SA
Keywords: NLP, chatbot, Conversational AI, Sentiment Analysis, Deep Learning, RASA, RASA X
- January 2020 - March 2020: **Senior R&D Scientific Researcher**
DataScouting, Thessaloniki, Greece
Co-leading Research Design of Algorithms referred to problems in the area of Machine Learning (including Deep Learning), Computer Vision, Image Processing & Analysis and Statistical Modelling & Analysis.
Keywords: Artificial Intelligence, Machine Learning, Pattern Recognition, Deep learning, CNNs, Python, Tensorflow, Cuda (GPU processing), Keras, Pytorch, OpenCV, Face Detection & Recognition, Change (Anomaly) Detection, OCR, Supervision of an agile team.
- December 2018 - December 2019: **R&D Task Leader**
CERTH-ITI, Thessaloniki, Greece
Keywords: Artificial Intelligence, Machine Learning (Classification, Regression, Clustering, Dimensionality Reduction), Pattern Recognition, Deep learning, CNNs, Python, Tensorflow, Cuda (GPU processing), Keras, Pytorch, OpenCV, Face Detection & Recognition, Object Detection & Tracking, (abnormal/violent) Activity Recognition, Image Retrieval, Dockers, Supervision of an agile team.
- June 2018 - September 2018: **Associate Application Consultant**
VELTIO, Thessaloniki, Greece
Keywords: Database queries, RPAS Oracle, Python, Java, Bash Shell scripts.
- October 2011 - September 2015: **Research Engineer / Doctoral Candidate**
ICUBE Laboratory, MIV Group, University of Strasbourg, France.
Keywords: Machine Learning (Classification, Clustering, Dimensionality Reduction), Image Processing, Statistical Modelling & Analysis, Medical Imaging, Kernel Density Estimation, Gaussian Model, Random Forests, H0-Hypothesis Testing, Confidence Intervals, Permutation testing, Monte Carlo Simulation, Python/Cython (numpy, scipy, matplotlib, scikit-learn, mayavi), MATLAB, C++, Supervision of undergraduate and postgraduate students.
- November 2009 - September 2011: **iOS Application Developer (*iPhone / iPod / iPad*)**
iTeamApps, Greece.
Keywords: Objective-C, Xcode, Cocoa Library.

- November 2010 - August 2011: **Analyst Programmer / System Administrator Assistant**
Department of Research and Information Technology, Greek Army
(*compulsory military service in Greece*).
- September 2007 - October 2010: **Research Engineer**
I.P.AN Group (Information Processing & ANalysis),
Computer Science Department, University of Ioannina, Greece.
- October 2009 - September 2010: **Teaching Assistant**
Course: " Signals and Systems " (*B.Sc.'s 3rd year*),
Computer Science Department, University of Ioannina, Greece.
- October 2008 - September 2009: **Teaching Assistant**
Course: " Computational Mathematics " (*B.Sc.'s 3rd year*),
Computer Science Department, University of Ioannina, Greece.
- March 2008 - August 2008: **System Administrator Assistant**
IT Group, Computer Science Department,
University of Ioannina, Greece.

EDUCATION:

- October 2011 - September 2015: **Ph.D in Signal and Image Processing**

Doctoral School MSII 269, iCube-MIV group, University of Strasbourg, France.

Thesis: "Statistical Modelling of High Order Tensors in Diffusion Weighted Magnetic Resonance Imaging" - (*written in English*).

Keywords: *Image Processing and Analysis, Medical Imaging, Statistical Analysis, Machine Learning, Pattern Recognition, DW-MRI data, High Order Tensors, High Dimensional data, Non-linear Dimensionality Reduction, Mixture Models, H_0 Hypothesis Testing, p-value estimation, Confidence Intervals, Permutation Testing, Monte Carlo Simulation, Decision Trees, Random Forest Classifiers, Python (numpy, scipy, matplotlib, scikit-learn, mayavi etc.), Cython, MATLAB, C, C++.*

Supervisors: Prof. Christian HEINRICH, Prof. Stéphane KREMER.
- October 2008 - October 2010: **M.Sc. in Computer Science**

Specialization: "**Technologies and Applications**" the majority of the completed courses including the produced innovative research belong to the general domains that follow:
Bioinformatics, Signal & Image Processing, Machine Learning, Artificial Intelligence, Pattern Recognition, Statistical Modelling & Analysis, Optimization etc.

Degree 9.90/10, "EXCELLENT"

Computer Science Department, University of Ioannina, Greece.

Thesis: "Optical flow estimation using spatially varying smoothing"- (*written in English*).

Keywords: *Image Processing and Analysis, Machine Learning, Computer Vision, Optical Flow problem, Motion Estimation, Image Segmentation, Super-pixels, Statistical Analysis, Variational Inference, Bayesian Methodology, Student's t-distribution, MATLAB, MEX, C.*

Supervisor: Associate Prof. Christophoros NIKOU.

- October 2003 - November 2008: **B.Sc. in Computer Science**

Degree 7.32/10, "VERY GOOD"

Computer Science Department, University of Ioannina, Greece.

Thesis: "Signal and image registration by using generalized elastic nets" - (*written in English*).

Keywords: *Signal and Image Processing and Analysis, Signal and Image Registration, Image Segmentation, MATLAB.*

Supervisor: Associate Prof. Christophoros NIKOU.

LANGUAGES:

English (*level C1*) - French (*level B2*) - Greek (*native*).

OTHER:

- First Certificate of English, University of Cambridge.
- Driving License (*for Europe, type B*).

PUBLICATIONS:

- **CURRENT WORK TO BE PUBLISHED**

[CW-1] (1) **Article** ready to be **submitted for approval** at an **international journal** in the area of **Medical Imaging**.

[CW-2] (1) **Article** **submitted for approval** at an **international journal** in the area of **Human Behaviour Monitoring**.

- **ARTICLES IN INTERNATIONAL JOURNALS**

[J1] G. Chantas, **Th. Gkamas** and C. Nikou. " Variational-Bayes optical flow ". Journal of Mathematical Imaging and Vision (**JMIV**), vol.50, no 3, pp. 199-213, 2014.

- **PAPERS IN INTERNATIONAL CONFERENCES**

[C1] **Th. Gkamas** and C. Nikou. " Guiding optical flow using superpixels ". 17th International Conference on Digital Signal Processing (DSP'11), 6-8 July 2011, Corfu, Greece.

[C2] **Th. Gkamas**, G. Chantas and C. Nikou. " A probabilistic formulation of the optical flow problem ". Proceedings of the 21st International Conference on Pattern Recognition (**ICPR'12**), pp. 754-757, 11-15 November 2012, Tsukuba, Japan.

[C3] **Th. Gkamas**, F. Renard, Ch. Heinrich and S. Kremer. " A fourth order tensor statistical model for diffusion weighted MRI – application to population comparison ". 4th International Conference on Pattern Recognition Application and Methods (**ICPRAM'15**), 10-12 January 2015, Lisbon, Portugal.

- **TECHNICAL REPORT**

[T1] **Th. Gkamas, C. Nikou, and G. Chantas, " Variational-Bayes Optical Flow ", Technical Report - Department of Computer Science & Engineering, University of Ioannina, Greece, January, 2012.**

(*) **Period 09/2015 - now:**

- **Mentoring** young talents/researchers/students (*currently*: 2 undergraduate CS students and 2 high-level researchers).
- **Expanding my knowledge and skills** through online and in-class courses relevant to my interests (see **Linkedin** profile for more details and obtained Certificates).
- **Collaborating** with scientists and professionals to produce innovative research, useful in our daily lives, in several research fields such as, **Neuroscience, Medical Imaging, Biological Imaging, Meteorology, Web "Smart" Development** etc.
- Participating in reviewing and writing **international scientific publications**.
- **01/2018 - 03/2018: Volunteering in IOATech** (mentoring, brainstorming, project management, developing open-source software & applications, give talks/presentations in order to share my knowledge and expertise with young, but not exclusively, students, scientists, professionals etc.).
- Maintaining/Repairing/Upgrading/Back-up laptops (**HW/SW**) as a hobby.
- **Interested** in tasks such as: **IoT and (Bio-Medical) Wearable Devices and Project Management and Consulting** in the near future.