

# **Δρ. Αναστάσιος Λ. Κεσίδης**

## **Σύντομο βιογραφικό**

### **I. ΓΝΩΣΤΙΚΟ ΑΝΤΙΚΕΙΜΕΝΟ**

Ψηφιακή Επεξεργασία Εικόνας και Αναγνώριση Προτύπων με έμφαση στην Επεξεργασία Εγγράφων και Γεωχωρικών Δεδομένων

### **II. ΣΠΟΥΔΕΣ**

2001	Διδακτορικό δίπλωμα, Τμήμα Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών, Δημοκρίτειο Πανεπιστήμιο Θράκης
1995	Δίπλωμα μηχανικού, Τμήμα Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών, Δημοκρίτειο Πανεπιστήμιο Θράκης

### **III. ΑΚΑΔΗΜΑΪΚΗ ΕΜΠΕΙΡΙΑ**

2023-σήμερα	Καθηγητής Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής Πανεπιστήμιο Δυτικής Αττικής
2016-2023	Αναπληρωτής Καθηγητής Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής Πανεπιστήμιο Δυτικής Αττικής
2010-2016	Επίκουρος Καθηγητής Τμήματος Πολιτικών Μηχανικών Τ.Ε. και Μηχανικών Τοπογραφίας και Γεωπληροφορικής Τ.Ε Τεχνολογικό Εκπαιδευτικό Ίδρυμα Αθήνας

### **IV. ΕΡΕΥΝΗΤΙΚΗ & ΕΡΓΑΣΙΑΚΗ ΕΜΠΕΙΡΙΑ**

2005-2010	Συνεργαζόμενος Ερευνητής Ινστιτούτο Πληροφορικής και Τηλεπικοινωνιών ΕΚΕΦΕ «Δημόκριτος»
2002-2005	Υπεύθυνος Έρευνας και Ανάπτυξης Business Systems International A.E

2000-2002            Μεταδιδακτορικός ερευνητής  
                          Centre for Vision, Speech and Signal Processing  
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## V. ΔΙΔΑΣΚΑΛΙΑ

- **Τηλεπισκόπηση και Μηχανική Μάθηση (2021-σήμερα)**  
Διϊδρυματικό Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Πληροφορικής, Πανεπιστήμιο Δυτικής Αττικής (συνδιδασκαλία)
- **Τεχνητή Νοημοσύνη και Μηχανική Μάθηση (2021-σήμερα)**  
Διϊδρυματικό Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Πληροφορικής, Πανεπιστήμιο Δυτικής Αττικής (συνδιδασκαλία)
- **Επεξεργασία και Ανάλυση Εικόνας (2020-σήμερα)**  
Διϊδρυματικό Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Πληροφορικής, Πανεπιστήμιο Δυτικής Αττικής (συνδιδασκαλία)
- **Τεχνητή Νοημοσύνη (2020-σήμερα)**  
Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής, Πανεπιστήμιο Δυτικής Αττικής
- **Εξόρυξη δεδομένων (2020-σήμερα)**  
Διϊδρυματικό Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Πληροφορικής, Πανεπιστήμιο Δυτικής Αττικής (συνδιδασκαλία)
- **Εισαγωγή στην Ψηφιακή Επεξεργασία Εικόνας (2019-σήμερα)**  
Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής, Πανεπιστήμιο Δυτικής Αττικής
- **Προγραμματιστικές Τεχνικές και Αλγόριθμοι (2019-σήμερα)**  
Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής, Πανεπιστήμιο Δυτικής Αττικής
- **Ψηφιακή Επεξεργασία Εικόνας (2016-σήμερα)**  
Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής, Πανεπιστήμιο Δυτικής Αττικής
- **Αριθμητικές Μέθοδοι (2014-σήμερα)**  
Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής, Πανεπιστήμιο Δυτικής Αττικής
- **Προγραμματισμός & Βάσεις Δεδομένων (2014-σήμερα)**  
Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής, Πανεπιστήμιο Δυτικής Αττικής
- **Αναγνώριση Προτύπων (2013-2020)**

Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Πληροφορικής,  
Πανεπιστήμιο Δυτικής Αττικής

- **Εισαγωγή στην Επεξεργασία Εικόνας** (2010-σήμερα)  
Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Πληροφορικής,  
Πανεπιστήμιο Δυτικής Αττικής (συνδιδασκαλία)
- **Τεχνητή Νοημοσύνη** (2010-2012)  
Πρόγραμμα Μεταπτυχιακών Σπουδών, Τμήμα Μηχανικών Πληροφορικής,  
Τεχνολογικό Εκπαιδευτικό Ίδρυμα Αθήνας (συνδιδασκαλία)
- **Εφαρμογές Προγραμματισμού** (2008-2014)  
Τμήματος Πολιτικών Μηχανικών Τ.Ε. και Μηχανικών Τοπογραφίας και  
Γεωπληροφορικής Τ.Ε, Τεχνολογικό Εκπαιδευτικό Ίδρυμα Αθήνας
- **Πληροφορική και Προγραμματισμός** (2004-2019)  
Τμήμα Μηχανικών Τοπογραφίας και Γεωπληροφορικής, Πανεπιστήμιο Δυτικής  
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## VI. ΔΗΜΟΣΙΕΥΣΕΙΣ

- A. L. Kesidis and N. Papamarkos, “On the inverse Hough transform,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 21, no. 12, pp. 1329–1343, 1999.
- A. Kesidis and N. Papamarkos, “On the inverse Hough transform and its application for edge detection and filtering,” in *Proceedings of the International Conference on Computational Intelligence for Modeling Control and Automation, CIMCA*, 1999, vol. 99, pp. 48–53.
- A. L. Kesidis and N. Papamarkos, “A window-based inverse Hough transform,” *Pattern Recognition*, vol. 33, no. 6, pp. 1105–1117, 2000.
- A. L. Kesidis and N. Papamarkos, “On the gray-scale inverse Hough transform,” *Image and Vision Computing*, vol. 18, no. 8, pp. 607–618, 2000.
- A. L. Kesidis and N. Papamarkos, “A gray-scale inverse Hough transform algorithm,” in *2000 IEEE International Symposium on Circuits and Systems (ISCAS)*, 2000, vol. 5, pp. 297–300.
- A. L. Kesidis and N. Papamarkos, “A window-based gray-scale inverse Hough transform algorithm and its applications on gray-scale line filtering,” in *Proceedings 2001 International Conference on Image Processing (Cat. No. 01CH37205)*, 2001, vol. 3, pp. 154–157.
- A. Kesidis and N. Papamarkos, “Exact reconstruction of gray-scale images from projections,” in *Recent Trends in Multimedia Information Processing*, 2002, pp. 317–321.

- A. Kesidis and N. Papamarkos, "Exact image reconstruction using a limited number of projection samples," in *Proceedings of the 3rd International Symposium on Image and Signal Processing and Analysis*, 2003, vol. 1, pp. 465–470.
- S. Perantonis, B. Gatos, K. Ntzios, I. Pratikakis, I. Vrettaros, A. Drigas, C. Emmanouilidis, A. Kesidis, D. Kalomirakis, "A system for processing and recognition of old Greek manuscripts(the D-SCRIBE project.)," *WSEAS Transactions on Computers*, vol. 3, no. 6, pp. 2049–2057, 2004.
- A. L. Kesidis and N. Papamarkos, "Grayscale image reconstruction from projections with linear noise response," in *IEEE Workshop on Signal Processing Systems Design and Implementation*, 2005., 2005, pp. 347–352.
- B. Gatos, I. Pratikakis, A. L. Kesidis, and S. Perantonis, "Efficient off-line cursive handwriting word recognition," in *10<sup>th</sup> International Workshop on Frontiers in Handwriting Recognition (IWFHR)*, 2006.
- A. L. Kesidis and N. Papamarkos, "Exact Grayscale Image Reconstruction from Projections," *International Journal of Pattern Recognition and Artificial Intelligence*, vol. 20, no. 05, pp. 711–725, 2006.
- A. L. Kesidis and B. Gatos, "A robust image watermarking technique based on spectrum analysis and pseudorandom sequences.," in *Proceedings of the 2<sup>nd</sup> International Conference on Computer Vision Theory and Applications (Volume 1)*, 2007, pp. 121–126.
- N. Stamatopoulos, B. Gatos, and A. Kesidis, "Automatic borders detection of camera document images," in *2nd International Workshop on Camera-Based Document Analysis and Recognition*, Curitiba, Brazil, pp. 71–78, 2007.
- A. L. Kesidis, "Limited Angle Image Reconstruction Using Four High Resolution Projection Axes at Co-Prime Ratio View Angles.," in *Proceedings of the 3<sup>rd</sup> International Conference on Computer Vision Theory and Applications (Volume 1)*, 2008, pp. 50–57.
- A. L. Kesidis and N. Papamarkos, "Exact image reconstruction from a limited number of projections," *Journal of Visual Communication and Image Representation*, vol. 19, no. 5, pp. 285–298, 2008.
- T. Konidaris, B. Gatos, S. J. Perantonis, and A. Kesidis, "Keyword matching in historical machine-printed documents using synthetic data, word portions and dynamic time warping," in *The 8<sup>th</sup> IAPR International Workshop on Document Analysis Systems*, 2008, pp. 539–545.
- D. I. Kosmopoulos, P. Antonakaki, K. Valasoulis, A. Kesidis, and S. Perantonis, "Human behavior classification using multiple views," in *Hellenic Conference on Artificial Intelligence*, 2008, pp. 123–134.
- D. Kosmopoulos, A. Kesidis, P. Antonakaki, K. Valasoulis, and S. J. Perantonis, "SemVeillance System: Tracking and behavior recognition under occlusions," in *18th European Conference on Artificial Intelligence*, 2008.

- A. Kesidis, E. Galiotou, B. Gatos, A. Lampropoulos, I. Pratikakis, I. Manolessou, A. Ralli, "Accessing the content of greek historical documents," in ***Proceedings of The 3<sup>rd</sup> Workshop on Analytics for Noisy Unstructured Text Data***, 2009, pp. 55–62.
- A. L. Kesidis and D. I. Kosmopoulos, "Robust Occlusion Handling with Multiple Cameras using a Homography Constraint.," in ***Proceedings of the 4<sup>th</sup> International Conference on Computer Vision Theory and Applications (Volume 2)***, 2009, pp. 560–565.
- B. Gatos, A. L. Kesidis, and A. Papandreu, "Adaptive zoning features for character and word recognition," in ***2011 International Conference on Document Analysis and Recognition***, 2011, pp. 1160–1164.
- A. L. Kesidis, E. Galiotou, B. Gatos, and I. Pratikakis, "A word spotting framework for historical machine-printed documents," ***International Journal on Document Analysis and Recognition (IJDAR)***, vol. 14, no. 2, pp. 131–144, 2011.
- A. L. Kesidis and B. Gatos, "Efficient cut-off threshold estimation for word spotting applications," in ***2011 International Conference on Document Analysis and Recognition***, 2011, pp. 279–283.
- G. Louloudis, A. L. Kesidis, and B. Gatos, "Efficient word retrieval using a multiple ranking combination scheme," in ***10th IAPR International Workshop on Document Analysis Systems***, 2012, pp. 379–383.
- P. Giampouras, E. Charou, and A. Kesidis, "Artificial Neural Network Approach for Land Cover Classification of Fused Hyperspectral and Lidar Data," in ***IFIP International Conference on Artificial Intelligence Applications and Innovations***, 2013, pp. 255–261.
- A. Kesidis and D. Karatzas, "Logo and trademark recognition," in ***Handbook of Document Image Processing and Recognition***, 2014, pp. 591–646.
- A. L. Kesidis, N. Vassilas, T. Tsenoglou, and D. Ghazanfarpour, "Experimental sensitivity investigation of mean-shift variants to bandwidth parameters for 3D buildings reconstruction," in ***9th International Symposium on Image and Signal Processing and Analysis (ISPA)***, 2015, pp. 114–119.
- E. Spyrou, A. Kesidis, P. Kolliopoulos, T. Tsenoglou, E. Bratsolis, S. Gyftakis, E. Charou, N. Vassilas, "Comparative study of visual feature extraction methods for building retrieval on urban databases," in ***6th International Conference on Information, Intelligence, Systems and Applications (IISA)***, 2015, pp. 1–6.
- T. Konidaris, A. L. Kesidis, and B. Gatos, "A segmentation-free word spotting method for historical printed documents," ***Pattern Analysis and Applications***, vol. 19, no. 4, pp. 963–976, 2016.
- G. Papadopoulos, N. Vassilas, and A. Kesidis, "Convolutional Neural Network for Detection of Building Contours Using Multisource Spatial Data," in ***International Conference on Engineering Applications of Neural Networks***, 2019, pp. 335–346.
- E. N. Zois, D. Tsourounis, I. Theodorakopoulos, A. L. Kesidis, and G. Economou, "A comprehensive study of sparse representation techniques for offline signature

verification," *IEEE Transactions on Biometrics, Behavior, and Identity Science*, vol. 1, no. 1, pp. 68–81, 2019.

A. L. Kesidis and B. Gatos, "Providing Access to Old Greek Documents Using Keyword Spotting Techniques," in *Visual Computing for Cultural Heritage*, Springer, Cham, 2020, pp. 85–102.

N. Merlemis, A. L. Kesidis, and I. Sianoudis, "Measurement of laser beam spatial profile by laser scanning," *European Journal of Physics*, 2020.

V. Krassanakis and A. L. Kesidis, "MatMouse: A Mouse Movements Tracking and Analysis Toolbox for Visual Search Experiments," *Multimodal Technol. Interact.* 2020, 4, 83.

V. Krassanakis, A. L. Kesidis, A. Pappa and L.-M. Misthos, "Performing cartographic visual search experiments online: opportunities and challenges." *Workshop on Adaptable Research Methods For Empirical Research with Map Users*, ICA Commission on Cognitive Visualization, Virtual Workshop, 2021.

C. Xydas, A. L. Kesidis, K. Kalogeropoulos, and A. Tsatsaris, "Buildings Extraction from Historical Topographic Maps via a Deep Convolution Neural Network", *Proceedings of the 17th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications*, p. 485-492, 2022.

A. L. Kesidis, V. Krassanakis, N. Merlemis and L.-M. Misthos, "A multipurpose patch creation tool for efficient exploration of digital cartographic products", *European Cartographic Conference*, 5, 56, 2022.

Λ.-Μ. Μισθός, Β. Κρασανάκης και A. Κεσίδης, "Αποτιμώντας το Ορεινό Τοπίο: Νέες Μέθοδοι, Τεχνικές & Τεχνολογίες", *10o Συνέδριο του ΕΜΠ και του ΜΕΚΔΕ-ΕΜΠ*, p. 779-791, 2022.

N. Merlemis, A. L. Kesidis, L.-M. Misthos, E. Zekou, E. Drakaki, and V. Krassanakis, "Quantifying visual heterogeneity of paper maps using diffuse reflectance spectroscopy", *European Cartographic Conference*, 5, 60, 2022.

I. Lazarou, A. L. Kesidis, G. Hloupis, and A. Tsatsaris, "Panic Detection Using Machine Learning and Real-Time Biometric and Spatiotemporal Data", *ISPRS International Journal of Geo-Information*, vol. 11, no. 11, 552, 2022.

A. L. Kesidis, V. Krassanakis, L-M. Misthos and N. Merlemis, "patchIT: a multipurpose patch creation tool for image processing applications", *Multimodal Technologies and Interaction*, vol. 6, no. 12, p. 111, 2022.

I. Lazarou, A. L. Kesidis and A. Tsatsaris, "Real-time Monitoring of Crowd Panic based on Biometric and Spatiotemporal Data", *International Conference on Computer Vision, Theory and Applications*, 2023.

V. Zelios, P. Mastorocostas, G. Kandilogiannakis, A. L. Kesidis, P. Tselenti, and A. Voulodimos, "Deep Learning Electric Load Forecasting for the Greek Power System," *27th International Conference on Circuits, Systems, Communications and Computers*, pp. 1–6, Jul. 2023.

G. Matidis, B. Gatos, A. L. Kesidis, and P. Kaddas, "Detecting Text on Historical Maps by Selecting Best Candidates of Deep Neural Networks Output", ***Document Analysis and Recognition - ICDAR 2023***, pp. 358–367, 2023.

L.-M. Misthos, V. Krassanakis, N. Merlemis, and A. L. Kesidis, "Modeling the Visual Landscape: A Review on Approaches, Methods and Techniques" ***Sensors***, vol. 23, no. 19, p. 8135, 2023.

I. Lazarou, A. Kesidis, and A. Tsatsaris, "Real-Time Detection and Mapping of Crowd Panic Emergencies," ***Proceedings of the 19th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications***, pp. 485–491, 2024.

N. Merlemis, E. Drakaki, E. Zekou, G. Ninos, and A. L. Kesidis, "Laser induced fluorescence and machine learning: a novel approach to microplastic identification," ***Applied Physics B***, vol. 130, no. 9, 2024.

M. Viore, A. L. Kesidis, and V. Krassanakis, "Deep learning for map generalization: Experimenting with coastline data at different map scales," ***European Cartographic Conference***, vol. 7, pp. 180, 2024.

N. Merlemis, A. Kesidis, L.-M. Misthos, and V. Krassanakis, "Leveraging machine learning and spectroscopic techniques towards estimating paper map scale levels," ***European Cartographic Conference***, vol. 7, pp. 104, 2024.

## VII. ΔΙΕΘΝΕΙΣ ΠΑΤΕΝΤΕΣ ΕΥΡΕΣΙΤΕΧΝΙΑΣ

- MEASUREMENT OF MITOTIC ACTIVITY, ***European Patent EP1579375***, 2006  
Guittet; Christelle (FR), Ducksbury; Paul Gerard (GB), M., Petrou; Maria (GB), Kesidis; Anastasios (GR), Cipolla; Roberto (GB), Varga; Margaret (GB)
- HISTOLOGICAL ASSESSMENT, ***United States Patent 7079675***, 2006  
Hamer; Michael J (GB), Petrou; Maria (GB), Kesidis; Anastasios (GR), Varga; Margaret (GB)
- HISTOLOGICAL ASSESSMENT OF NUCLEAR PLEOMORPHISM, ***European Patent EP1579366***, 2007  
Petrou; Maria (GB), Kesidis; Anastasios (GR), Varga; Margaret (GB), Ducksbury; Paul Gerard (GB)
- MEASUREMENT OF MITOTIC ACTIVITY, ***United States Patent 7577280***, 2009  
Guittet; Christelle (FR), Ducksbury; Paul Gerard (GB), M., Petrou; Maria (GB), Kesidis; Anastasios (GR), Cipolla; Roberto (GB), Varga; Margaret (GB)
- METHOD, APPARATUS AND COMPUTER PROGRAM FOR MEASUREMENT OF MITOTIC ACTIVITY, ***European Patent EP1760634***, 2009  
Varga; Margaret (GB), Guittet; Christelle (FR), Ducksbury; Paul Gerard (GB), Petrou; Maria (GB), Kesidis; Anastasios (GR), Cipolla; Roberto (GB)

- HISTOLOGICAL ASSESSMENT OF NUCLEAR PLEOMORPHISM, *United States Patent 7616790*, 2009  
Petrou; Maria (GB), Kesidis; Anastasios (GR), Varga; Margaret (GB), Ducksbury; Paul Gerard (GB)

## VIII. ΚΡΙΤΗΣ ΕΡΓΑΣΙΩΝ

- Διεθνή επιστημονικά περιοδικά
  - Electronic Letters
  - Signal Processing
  - Journal of Mathematical Imaging and Vision
  - Advances in Multimedia
  - Research Letters in Signal Processing
  - Journal of Electronic Imaging
  - Applied Sciences
  - International Journal on Document Analysis and Recognition
  - IEEE Transactions on Image Processing
  - Pattern Recognition
  - Artificial Intelligence Review
- Διεθνή συνέδρια
  - Int. Conf. on Computer Vision Theory and Applications (VISAPP)
  - Int. Conf. on Computer Vision Systems (ICVS)
  - Int. Conf. on Pattern Recognition (ICPR)
  - IEEE Conference on Games (CoG)
  - Int. Conf. on Document Analysis and Retrieval (ICDAR)
  - Int. Conf. on Systems, Signals and Image Processing (IWSSIP)
  - Int. Workshop on Document Analysis Systems (DAS)
  - Int. Conf. on Frontiers in Handwriting Recognition (ICFHR)