

# 1. ΣΥΝΟΠΤΙΚΟ ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

## 1.1 Ατομικά Στοιχεία

Όνοματεπώνυμο: Παντελεήμων Ασβεστάς  
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## 1.2 Σπουδές

### Προπτυχιακές σπουδές

Τμήμα Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών, Εθνικό Μετσόβιο Πολυτεχνείο,  
κύκλος σπουδών Ηλεκτρονικού Ηλεκτρολόγου Μηχανικού  
βαθμός διπλώματος: «λίαν καλώς» (8,51)

### Εκπόνηση διδακτορικής διατριβής

Τμήμα Ηλεκτρολόγων Μηχανικών & Μηχανικών Υπολογιστών, Εθνικό Μετσόβιο Πολυτεχνείο.

## 1.3 Ερευνητική – Επαγγελματική Εμπειρία

2018 – σήμερα Αναπληρωτής Καθηγητής στο Τμήμα Μηχανικών Βιοϊατρικής – Πανεπιστήμιο  
Δυτικής Αττικής  
2014 – 2018 Επίκουρος Καθηγητής στο Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας Τ.Ε. - ΤΕΙ  
Αθήνας  
2009 – 2014 Καθηγητής Εφαρμογών στο Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας Τ.Ε. (πρώην  
Τεχνολογίας Ιατρικών Οργάνων) - ΤΕΙ Αθήνας  
2008 – 2009 Επιστημονικός/Εργαστηριακός συνεργάτης Τμήμα Τεχνολογίας Ιατρικών Οργάνων -  
ΤΕΙ Αθήνας  
1998 – 2008 Επιστημονικός Συνεργάτης στο Ερευνητικό Πανεπιστημιακό Ινστιτούτο Συστημάτων,  
Επικοινωνιών και Υπολογιστών, Εθνικό Μετσόβιο Πολυτεχνείο  
Συμμετοχή σε προγράμματα χρηματοδοτούμενα από την Ευρωπαϊκή Ένωση, τη  
Γενική Γραμματεία Έρευνας και Τεχνολογίας και ιδιωτικούς και δημόσιους φορείς  
2003 – 2006 Παροχή Υπηρεσιών Τεχνικής Υποστήριξης Ιατρικού Δικτύου στο Δ.Θ.Κ.Α. «ΥΓΕΙΑ»  
Α.Ε.  
Υπεύθυνος για την αναβάθμιση, τη συντήρηση και την επίβλεψη ορθής λειτουργίας  
δικτύου ιατρικών υπολογιστικών συστημάτων του Δ.Θ.Κ.Α. «ΥΓΕΙΑ».

## 1.4 Επαγγελματικά προσόντα

- Άριστη γνώση προγραμματισμού σε C/C++, C#, Matlab.
- Άριστη γνώση των προγραμμάτων ανάπτυξης εφαρμογών Microsoft Visual Studio και Borland C++ Builder.
- Πολύ καλή γνώση θεμάτων δικτύωσης υπολογιστών.
- Πολύ καλή γνώση ανάπτυξης διαδικτυακών εφαρμογών (ASP, PHP, Java)
- Πολύ καλή γνώση ανάπτυξης εφαρμογών βάσεων δεδομένων (SQL Server, MySql).
- Πολύ καλή γνώση προγραμματισμού μικροελεγκτών AVR
- Άριστη γνώση εφαρμογών γραφείου.

## 1.5 Εκπαιδευτική Δραστηριότητα

### 1.5.1 Διδασκαλία προπτυχιακών μαθημάτων

- Ιατρικά Ηλεκτρονικά - Θεωρία και Εργαστήριο στο Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας Τ.Ε. του ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής) από το 2009 έως σήμερα.
- Ιατρική Πληροφορική - Θεωρία και Εργαστήριο στο Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας Τ.Ε. στο ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής) από το 2009 έως σήμερα.
- Εισαγωγή στη Ρομποτική - Θεωρία στο Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής από το 2018 έως σήμερα.
- Θερμοδυναμική στο Τμήμα Τεχνολογίας Ιατρικών Οργάνων του ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής) από 2008 έως 2009.
- Βιοϊατρική Τεχνολογία Ι (Εργαστήριο) στο Τμήμα Τεχνολογίας Ιατρικών Οργάνων του ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής) από 2008 έως 2009.

### 1.5.2 Διδασκαλία μεταπτυχιακών μαθημάτων

- “Πληροφορική” στο Μεταπτυχιακό Πρόγραμμα Σπουδών Ιατρικής Φυσικής & Ακτινοφυσικής του Πανεπιστημίου Αθήνας από το 2009 έως σήμερα.
- “Μεταφορά και Τηλε-επεξεργασία Ιατρικών Εικόνων” στο Μεταπτυχιακό Πρόγραμμα Σπουδών Ιατρικής Φυσικής του Πανεπιστημίου Πατρών από 2013 έως 2017
- “Σχεδίαση Δικτύων Δεδομένων” στο Μεταπτυχιακό Πρόγραμμα Σπουδών Σχεδίασης και Ανάπτυξης Προηγμένων Συστημάτων Ηλεκτρονικής, του ΤΕΙ Αθήνας (νυν Τμήμα Ηλεκτρολόγων και Ηλεκτρονικών Μηχανικών - Πανεπιστήμιο Δυτικής Αττικής) από 2015 έως 2017.
- “Ανάλυση και Επεξεργασία Εικόνας” στο Μεταπτυχιακό Πρόγραμμα Σπουδών Τεχνολογίες Πληροφορικής στην Ιατρική και τη Βιολογία του Πανεπιστημίου Αθήνας, από το 2014 έως 2018.
- “Τεχνολογίες Πληροφορικής στην Ιατρική και τις άλλες Βιοεπιστήμες”, Μεταπτυχιακό Πρόγραμμα Σπουδών Προηγμένα Συστήματα και Μέθοδοι στη Βιοϊατρική Τεχνολογία, Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας ΤΕ, ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής), 2014 – σήμερα.
- “Βιοϊατρικά Ηλεκτρονικά και Ιατρική Οργανολογία, Εμβιομηχανική, Προσθετικές Διατάξεις”, Μεταπτυχιακό Πρόγραμμα Σπουδών Προηγμένα Συστήματα και Μέθοδοι στη Βιοϊατρική Τεχνολογία, Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας ΤΕ, ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής), 2014 – σήμερα.

### 1.5.3 Επίβλεψη πτυχιακών/διπλωματικών εργασιών

- 50 προπτυχιακές εργασίες στο Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας ΤΕ, ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής του Πανεπιστημίου Δυτικής Αττικής).
- 8 μεταπτυχιακές εργασίες στο Μεταπτυχιακό Πρόγραμμα Σπουδών Προηγμένα Συστήματα και Μέθοδοι στη Βιοϊατρική Τεχνολογία, Τμήμα Μηχανικών Βιοϊατρικής Τεχνολογίας ΤΕ, ΤΕΙ Αθήνας (νυν Τμήμα Μηχανικών Βιοϊατρικής - Πανεπιστήμιο Δυτικής Αττικής).
- 2 μεταπτυχιακές εργασίες στο Μεταπτυχιακό Πρόγραμμα Σπουδών Τεχνολογίες Πληροφορικής στην Ιατρική και τη Βιολογία του Πανεπιστημίου Αθήνας.

## 1.6 Ερευνητική Δραστηριότητα

- Αναγνώριση προτύπων

- Ανάπτυξη συστημάτων υποστήριξης της διάγνωσης
- Ιατρική πληροφορική με έμφαση στην ψηφιακή επεξεργασία και ανάλυση ιατρικών εικόνων
- Ανάπτυξη γραμμικών και μη-γραμμικών τεχνικών ψηφιακής επεξεργασίας ιατρικών εικόνων
- Αυτόματη ευθυγράμμιση και σύντηξη πολυδιάστατων ιατρικών δεδομένων με μεθόδους ολικής βελτιστοποίησης
- Ψηφιακή Επεξεργασία Βιοσημάτων (EEG, ECG, μιογραφικά σήματα κ.λπ.)
- Οπτικοποίηση ιατρικών δεδομένων
- Ιατρική απεικόνιση με έμφαση στην τρισδιάστατη και τετραδιάστατη ρεαλιστική απεικόνιση
- Τηλεματικές εφαρμογές στην ιατρική

## 1.7 Δημοσιεύσεις

- 47 εργασίες σε επιστημονικά περιοδικά.
- 5 κεφάλαια σε επιστημονικά βιβλία.
- 69 εργασίες στα πρακτικά διεθνών επιστημονικών συνεδρίων με κρίση.
- 6 εργασίες στα πρακτικά Ελληνικών επιστημονικών συνεδρίων
- 476 ετεροαναφορές από τρίτους
- h-index Scopus: 13 (εξαιρώντας αυτό-αναφορές όλων των συγγραφέων των δημοσιεύσεων)
- h-index Google Scholar: 16

## 1.8 Επιστημονικοί - Επαγγελματικοί Σύλλογοι

- Μέλος Τεχνικού Επιμελητηρίου Ελλάδας (ΤΕΕ) από 21/10/1997.

## 1.9 Υποτροφίες

- Τριετής υποτροφία για εκπόνηση διδακτορικής διατριβής από το Τμήμα Ηλεκτρολόγων Μηχανικών & Μηχανικών Υπολογιστών του Εθνικού Μετσόβιου Πολυτεχνείου.

## 1.10 Ξένες Γλώσσες

Αγγλική.

# 2. ΚΑΤΑΛΟΓΟΣ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΔΗΜΟΣΙΕΥΣΕΩΝ

## 2.1 Διατριβές

Π. Ασβεστάς, "Ανάπτυξη Αλγορίθμων με Βάση τη Fractal Θεωρία για την Επεξεργασία Ιατρικών Δεδομένων", Διδακτορική Διατριβή, Τμ. Ηλεκτρολόγων Μηχ/κών & Μηχ/κών Υπολογιστών, ΕΜΠ, Μάρτιος 2001 (**Βραβείο Ιδρύματος «Δημητρίου Ν. Χωραφά»**)

Π. Ασβεστάς, "Ανάλυση Θορύβου στο Πεδίο του Χρόνου", Διπλωματική Εργασία, Τμ. Ηλεκτρολόγων Μηχ/κών & Μηχ/κών Υπολογιστών, ΕΜΠ, Οκτώβριος 1996.

## 2.2 Δημοσιεύσεις σε Διεθνή Επιστημονικά Περιοδικά

- Δ1 **P.A. Asvestas**, G.K. Matsopoulos, K.S. Nikita, "A Power Differentiation Method of Fractal Dimension Estimation for 2-D Signals," *Journal of Visual Communication and Image Representation*, vol. 9, no. 4, pp. 392-400, December 1998.
- Δ2 **P.A. Asvestas**, G.K. Matsopoulos, K.S. Nikita "Estimation of Fractal Dimension of Images using a Fixed Mass Approach," *Pattern Recognition Letters*, vol. 20, pp. 347-354, March 1999.
- Δ3 V. Kouloulis, C. Antypas, C. Dardoufas, J. Kouvaris, P. Sandilos, S. Seferlis, G. Matsopoulos, N. Uzunoglu, **P Asvestas**, L. Vlahos, "Evaluation of Recalcification of Bone Metastases after Radiotherapy and I.V. Infusion of Disodium Pamidronate, using Image Processing Techniques:

- Comparative Assessment using Measurements of the Optical Density of Plain Radiography”, *Physica Medica*, vol. XVII, no. 1, pp. 17-24, January-March 2001.
- Δ4 C. Papageorgiou, I. Liappas, **P. Asvestas**, C. Vasios, G.K. Matsopoulos, C. Nikolaou, K.S. Nikita, N. Uzunoglu, A. Rabavilas, “Abnormal P600 in Heroin Addicts with Prolonged Abstinence Elicited during a Working Memory Test,” *Neuroreport*, vol. 12, no. 8, pp. 1773-1778, June 2001.
- Δ5 C. Papageorgiou, V.P. Kontaxakis, B.J. Havaki-Kontaxaki, S. Stamouli, C. Vasios, **P. Asvestas**, G.K. Matsopoulos, E. Kontopantelis, A. Rabavilas, N. Uzunoglu, G.N. Christodoulou, “Impaired P600 in Neuroleptic Naïve Patients with First-Episode Schizophrenia”, *Neuroreport*, vol. 12, no. 13, pp. 2801-2806, September 2001.
- Δ6 G.C. Kagadis, K.K. Delibasis, G.K. Matsopoulos, N.A. Mouravliansky, **P.A. Asvestas**, G.C. Nikiforidis, “A Comparative Study of Surface- and Volume-based Techniques for the Automatic Registration between CT and SPECT Brain Images”, *Medical Physics*, vol. 29, no. 2, pp.201-213, February 2002.
- Δ7 **P. Asvestas**, S. Golemati, G.K. Matsopoulos, K.S. Nikita, A.N. Nicolaidis, “Fractal Dimension Estimation of Carotid Atherosclerotic Plaques from B-mode Ultrasound: A Pilot Study,” *Ultrasound in Medicine and Biology*, vol. 28, no. 9, pp. 1129-1136, September 2002.
- Δ8 G.K. Matsopoulos, K.K. Delibasis, N.A. Mouravliansky, **P.A. Asvestas**, K.S. Nikita, V.E. Kouloulis, N.K. Uzunoglu, “CT-MRI Automatic Surface-based Registration Schemes Combining Global and Local Optimization Techniques”, *Technology and Health Care: Official Journal of the European Society for Engineering and Medicine*, vol. 11, no. 4, pp. 219-232, October 2003.
- Δ9 N. Mouravliansky, G.K. Matsopoulos, K. Delibasis, **P. Asvestas**, K.S. Nikita, “Combining a Morphological Interpolation Approach with a Surface Reconstruction Method for the 3-D Representation of Tomographic Data”, *Journal of Visual Communication and Image Representation*, vol. 15, issue 4, pp. 565-579, December 2004.
- Δ10 E.I. Zacharaki, G.K. Matsopoulos, **P.A. Asvestas**, K. Gröndahl, and H-G. Gröndahl, “A digital subtraction radiography scheme based on automatic multiresolution registration”, *Dentomaxillofacial Radiology*, vol. 33, pp. 379 - 390, December 2004.
- Δ11 G.K. Matsopoulos, V. Kouloulis, **P. Asvestas**, N. Mouravliansky, K. Delibasis, D. Demetriades, “MITIS: A WWW-based Medical System for Managing and Processing Gynecological-Obstetrical-Radiological Data”, *Computer Methods and Programs in Biomedicine*, vol. 76, issue 1, pp. 53-71, October 2004.
- Δ12 G.K. Matsopoulos, **P. Asvestas**, V. Kouloulis, K. Delibasis, N. Uzunoglu, P. Karaiskos, P. Sandilos, “Registration of electronic portal images for patient set-up verification”, *Physics in Medicine and Biology*, vol. 49, pp. 3279-3289, July 2004.
- Δ13 G.K. Matsopoulos, **P.A. Asvestas**, N.A. Mouravliansky, K.K. Delibasis, “Multimodal registration of retinal images using Self Organizing Maps”, *IEEE Trans. Med. Imag.* vol. 23, issue 12, pp. 1557-1563, December 2004.
- Δ14 G.K. Matsopoulos, N.A. Mouravliansky, **P.A. Asvestas**, K.K. Delibasis, and V. Kouloulis, “Thoracic Non-Rigid Registration Combining Self Organizing Maps and Radial Basis Functions”, *Medical Image Analysis*, vol. 9, issue 3, pp. 237-254, June 2005.
- Δ15 G.K. Matsopoulos, N.A. Mouravliansky, **P.A. Asvestas**, K.K. Delibasis, K. Gröndahl, H.-G. Gröndahl, “Image registration based on lifting process: An application to digital subtraction radiography”, *IEEE Transactions on Information Technology in Biomedicine*, vol. 10, no. 4, pp. 763-774, 2006.
- Δ16 **P.A. Asvestas**, K.K. Delibasis, N.A. Mouravliansky, G.K. Matsopoulos, “ESTERR-PRO: A setup verification software system using electronic portal imaging”, *International Journal of Biomedical Imaging - Special Issue on Multimodality Imaging and Hybrid Scanners*, vol. 2007, Article ID 61523, 10 pp., 2007.

- Δ17 T. Economopoulos, G.K. Matsopoulos, **P.A. Asvestas**, K. Gröndahl, and H-G. Gröndahl, "Automatic Correspondence using the Enhanced Hexagonal Center-based Inner Search Algorithm for Point-based Dental Image Registration", *Dentomaxillofacial Radiology*, vol. 37, pp. 185 - 204, 2008.
- Δ18 G.K. Matsopoulos, **P.A. Asvestas**, K.K. Delibasis, NA. Mouravliansky and T.G. Zeyen, "Detection of Glaucomatous Change Based on Vessel Shape Analysis", *Computerized Medical Imaging and Graphics*, vol. 32, no. 3, pp. 183-192, 2008.
- Δ19 K.K. Delibasis, **P.A. Asvestas**, G.K. Matsopoulos, E. Zoulias, and S. Tseleni-Balafouta, "Computer Aided Diagnosis of Thyroid Malignancy using an Artificial Immune System Classification Algorithm", *IEEE Transactions on Information Technology in Biomedicine*, vol. 13, pp. 680 – 686. 2009.
- Δ20 V. Markaki, **P.A. Asvestas**, G.K. Matsopoulos, "An iterative point correspondence algorithm for automatic image registration: an application to dental subtraction radiography", *Computer Methods and Programs in Biomedicine*, vol. 93, pp. 61 – 72, 2009.
- Δ21 V. Markaki, **P.A. Asvestas**, G.K. Matsopoulos, "Application of Kohonen network for automatic point correspondence in 2D medical images", *Computers in Biology and Medicine*, vol. 39, pp. 630 – 645, 2009.
- Δ22 C.E. Vasios, E.M. Ventouras, G.K. Matsopoulos, I. Karanasiou, **P. Asvestas**, N.K. Uzunoglu, H.T. Van Schie and E.R.A. de Bruijn, "Classification of Event-Related Potentials Associated with Response Errors in Actors and Observers Based on Autoregressive Modeling", *The Open Medical Informatics Journal*, vol. 3, pp. 32-43, 2009.
- Δ23 T.L. Economopoulos, **P.A. Asvestas**, G.K. Matsopoulos, K. Gröndahl, H.-G. Gröndahl, "A contrast correction method for dental images based on histogram registration", *Dentomaxillofacial Radiology* 39, pp. 300-313, 2010.
- Δ24 T. L. Economopoulos, **P. A. Asvestas**, and G. K. Matsopoulos, "Automatic Correspondence on Medical Images: A Comparative Study of Four Methods for Allocating Corresponding Points", *Journal of Digital Imaging*, vol. 23, pp. 399-421, 2010.
- Δ25 T.L. Economopoulos, **P.A. Asvestas**, G.K. Matsopoulos, "Contrast enhancement of images using Partitioned Iterated Function Systems", *Image and Vision Computing*, vol. 28, pp. 45 – 54, 2010.
- Δ26 K. Delibasis, **P.A. Asvestas**, G.K. Matsopoulos "Multimodal Genetic Algorithms – Based Algorithm for Automatic Point Correspondence", *Pattern Recognition*, vol. 43, pp. 4011 – 4027, 2010.
- Δ27 G E Polychronaki<sup>1</sup>, P Y Ktonas, S Gatzonis A Siatouni, **P A Asvestas**, H Tsekou, D Sakas and K S Nikita, "Comparison of fractal dimension estimation algorithms towards epileptic seizure onset detection", *Journal of Neural Engineering*, vol. 7, 2010.
- Δ28 E.M. Ventouras, **P. Asvestas**, I. Karanasiou and George K Matsopoulos, "Classification of Error-Related Negativity (ERN) and Positivity (Pe) potentials using kNN and Support Vector Machines", *Computers in Biology and Medicine*, vol. 41, pp. 98-109, 2011.
- Δ29 K. Delibasis, **P.A. Asvestas**, G.K. Matsopoulos, "Automatic Point Correspondence using an Artificial Immune System Optimization Technique for Medical Image Registration", *Computerized Medical Imaging and Graphics*, vol. 35, pp. 31 – 41, 2011.
- Δ30 E.A. Zoulias, **P.A. Asvestas**, G.K. Matsopoulos and Sofia Tseleni-Balafouta, "A Decision Support System for Assisting Fine Needle Aspiration Diagnosis of Thyroid Malignancy", *Analytical and Quantitative Cytology and Histology*, vol. 33, pp. 215-222, 2011.
- Δ31 T.L. Economopoulos, **P.A. Asvestas**, G.K. Matsopoulos, B. Molnar and P. Windisch "Volumetric difference evaluation of registered three-dimensional pre-operative and post-operative CT dental data", *Dentomaxillofacial Radiology* vol. 41 , pp. 328-339, 2012.

- Δ32 A.A. Vlachokosta, **P.A. Asvestas**, F. Gkrozou, L. Lavasidis, G.K. Matsopoulos and M. Paschopoulos "Classification of hysteroscopic images using texture and vessel descriptors", *Medical and Biological Engineering and Computing*, vol. 51, pp. 859-867, 2013.
- Δ33 A.A. Vlachokosta, P.A. Asvestas, G.K. Matsopoulos, A. Kondi-Pafiti and N. Vlachos "Classification of histological images of the endometrium using texture features", *Analytical and Quantitative Cytology and Histology*, vol. 35, pp. 105-113, 2013.
- Δ34 K. K. Delibasis, S. Tassani, **P. Asvestas**, A.I. Kechriniotis and G.K. Matsopoulos, "A Fourier-based implicit evolution scheme for active surfaces, for object segmentation in volumetric images", *Measurement Science and Technology*, vol. 24, doi:10.1088/0957-0233/24/7/074021, 2013.
- Δ35 V.C. Korfiatis, **P.A. Asvestas**, K.K. Delibasis, and G.K. Matsopoulos, "A classification system based on a new wrapper feature selection algorithm for the diagnosis of primary and secondary polycythemia", *Computers in Biology and Medicine*, vol. 43, pp. 2118-2126, 2013.
- Δ36 K.K. Delibasis, **P.A. Asvestas**, A.I. Kechriniotis and G.K. Matsopoulos, "An implicit evolution scheme for active contours and surfaces based on IIR filtering", *Computers in Biology and Medicine*, vol. 48, pp. 42-54, 2014.
- Δ37 V.C. Korfiatis, **P.A. Asvestas** and G.K. Matsopoulos, "Automatic local parameterization of the Chan Vese active contour model's force coefficients using edge information", *Journal of Visual Communication and Image Representation*, vol. 29, pp. 71-78, 2015.
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