

CONTACT INFORMATION	Assistant Professor Department of Computer Science Texas State University San Marcos, TX 78666, USA	<i>Mobile:</i> +1-682-552-4478   <i>Work:</i> +1-512-245-7509   <i>E-mail:</i> vmetsis@txstate.edu   <i>Web:</i> cs.txstate.edu/~v_m137
RESEARCH INTERESTS	<b>Machine Learning, Data Mining and Computer Vision with applications in Smart Health and Well-being:</b> Analysis of human Genomic, Physiological and Behavioral data, Computer Vision, Bioinformatics, Computational Biology, Pervasive Computing, Smart Health-care Technology.	
TEACHING INTERESTS	<b>Primary Interests:</b> Artificial Intelligence, Machine Learning, Pattern Recognition, Data Mining, Bioinformatics, Computer Vision, Algorithms, Data Structures. <b>Other Interests:</b> Discrete Mathematics, Databases, Introductory Computer Science and Programming courses.	
EDUCATION	<b>The University of Texas at Arlington, Arlington, TX</b>	
	<b>Ph.D.</b> , Dept. of Computer Science and Engineering	<b>Aug. 2007 – Dec. 2011</b>
	<ul style="list-style-type: none"> <li>• Thesis Topic: <i>A Computational Framework for Human-Centered Multimodal Data Analysis</i></li> <li>• Advisers: Prof. Fillia Makedon &amp; Prof. Heng Huang</li> <li>• Area of Study: Computer Science - B.S. to Ph.D. program</li> </ul>	
	<b>Athens University of Economics and Business, Athens, Greece</b>	
	<b>B.S.</b> (with honors), Department of Informatics	<b>Oct. 2001 – Sept. 2005</b>
	<ul style="list-style-type: none"> <li>• Grade: 8.64/10. Corresponding of <i>Summa cum Laude</i>. Highest grade in class in Fall 2005 semester graduation ceremony.</li> <li>• <b>Major:</b> in Computer Science</li> <li>• Minor: Information Systems and Management</li> <li>• Thesis topic: Supervised Learning methods for Spam E-mail filtering (work published at CEAS 2006: "Spam Filtering with Naive Bayes – Which Naive Bayes?" - <b>188 citations as of Jan. 2014</b>)</li> </ul>	
ACADEMIC APPOINTMENTS	<b>Assistant Professor</b> Dept. of Computer Science, Texas State University	<b>Aug. 2014 – present</b>
	<b>Research Assistant Professor</b> Dept. of Computer Science and Engineering, University of Texas at Arlington	<b>Jan. 2012 – Aug. 2014</b>
	<ul style="list-style-type: none"> <li>• Supervisor: Professor &amp; Chair Fillia Makedon</li> <li>• Focus: Human-Centered Computing, Smart Healthcare Technology and Computer-Aided Rehabilitation.</li> </ul>	
	<b>Graduate Research Assistant</b> Dept. of Computer Science and Engineering, University of Texas at Arlington	<b>Sep. 2007 – Dec. 2011</b>
	<ul style="list-style-type: none"> <li>• Advisers: Prof. Fillia Makedon and Prof. Heng Huang</li> <li>• Conducted research for NSF funded projects: <ul style="list-style-type: none"> <li>◊ Development of a Next-Generation Multimodal Data Management Human-Sensing Instrument for Trustworthy Research Collaboration and Quality of Life Improvement (NSF-0923494, publications: [3], [6], [10], [12], [15], [17], [18]).</li> </ul> </li> </ul>	

- ◇ A Novel Human Centric CPS to Improve Motor & Cognitive Assessment and Enable Adaptive Rehabilitation (NSF-1035913, publications: [2], [8], [9]).
- ◇ An Exploratory Pilot Project to Build an Intelligent Human-Computer Interface System for Neurological Disorder Assessment and Rehabilitation (NSF-1041637, publications: [7]).
- ◇ A Large-Scale Data Mining Framework for Genome-Wide Mapping of Multi-Modal Phenotypic Biomarkers and Outcome Prediction (NSF-1117965, publications: [4], [14], [23]).

**Research Associate**

**Mar. 2006 – Aug. 2007**

Institute of Informatics and Telecommunications, National Center for Scientific Research “Demokritos”, Greece

- Supervisor: Dr. Vangelis Karkaletsis
- Focus: Research and development for the purposes of the European Commission-funded project “Quality Labeling of Medical Web Content using Multilingual Information Extraction (MedIEQ)”

OTHER  
PROFESSIONAL  
APPOINTMENTS

**The University of Texas at Arlington, Arlington, TX**

*Webmaster/Systems Administrator*

**Jun. 2008 – present**

- Development, maintenance and Web support of the web infrastructure at the Department of Computer Science and Engineering, including the main CSE website and supporting sub-systems (<http://www.cse.uta.edu/>).

**Athens University of Economics and Business, Athens, Greece**

*Webmaster*

**Feb. 2006 – Jun. 2007**

- Development and Maintenance of the Web based remote learning platform: E-Class (<http://eclass.aueb.gr/>)

*Systems Administrator*

**Feb. 2005 – Sep. 2005**

- *Undergrad Internship*: System Administrator and Microsoft Advanced Software Administrator at the Computer Science Labs of AUEB.

TEACHING  
EXPERIENCE

**The University of Texas at Arlington, Arlington, TX**

*Lecturer*

- CSE 5311 - Design & Analysis of Algorithms **Summer 2013 & Fall 2013**
  - ◇ [http://heracleia.uta.edu/~vangelis/CSE5311\\_FALL13/](http://heracleia.uta.edu/~vangelis/CSE5311_FALL13/)
  - ◇ [http://heracleia.uta.edu/~vangelis/CSE5311\\_SUM13/](http://heracleia.uta.edu/~vangelis/CSE5311_SUM13/)
- CSE 2320 - Algorithms & Data Structures **Summer 2010 & Fall 2013**
  - ◇ [http://heracleia.uta.edu/~vangelis/CSE2320\\_FALL13/](http://heracleia.uta.edu/~vangelis/CSE2320_FALL13/)
  - ◇ <http://heracleia.uta.edu/~vangelis/NOTES2320/>
- CSE 4391/6397 - CSE Study Abroad Program **Summer 2012**
  - ◇ Traveled with students to *Samos, Greece* to give lectures and supervise them on research projects.
  - ◇ <http://studyabroad.iit.demokritos.gr/>
- CSE 1311 - Introd. Programming for Engineers & Scientists **Spring 2012**
  - ◇ <http://heracleia.uta.edu/~vangelis/NOTES1311/>

*Teaching Assistant*

- CSE 4391/6397 - CSE Study Abroad Program **Summer 2011**

RESEARCH  
FUNDING

As a researcher at the Heracleia Human-Centered Computing Laboratory at UTA, I have been involved in writing many grant proposals seeking external funding from NSF and other funding agencies. A number of those proposals have been funded.

**At the University of Texas at Arlington**

*Co-Principal Investigator:*

- NSF-1338930: "Planning Grant: I/UCRC for Assistive Technologies to Enhance Human Performance", 2013.
- NSF-1258500: "EAGER: An Exploratory Pilot Project to Build Human-Centric Physical Activity Monitoring Tools for Enhancing Rehabilitation Therapy Engagement and Assessment", 2012-2013.
- NSF-1329119: "Doctoral Consortium and Student-Author Travel for the PETRA 2013 Conference", 2013-2014.
- NSF-1238660: "Doctoral Consortium and Student-Author Travel for the PETRA 2012 Conference", 2012-2013.

*Senior Investigator:*

- NSF-1338118: "MRI Collaborative: Development of iRehab, an Intelligent Closed-Loop Instrument for Adaptive Rehabilitation", 2013-2016.

*Participated in writing the proposal and conducted research for the following grants:*

- NSF-CNS 0923494 MRI grant: \$754,622, 2009-2013
- NSF-CNS 1035913 CPS grant: \$682,001, 2010-2013
- NSF-IIS 1041637 HCC EAGER grant: \$152,053, 2010-2013
- NSF-IIS 1117965: III Grant: \$315,904, 2011-2014.

**At the National Center for Scientific Research "Demokritos", Greece**

*Conducted research for:*

- European Commission-funded project MedIEQ, €1,290,098, 2006-2009

PH.D. THESIS

"A Computational Framework for Human-Centered Multimodal Data Analysis". *Department of Computer Science and Engineering, University of Texas at Arlington, December 2011.* <http://hdl.handle.net/10106/9588>

REFEREED  
JOURNAL  
PUBLICATIONS

- [1] **V. Metsis**, H. Huang and F. Makedon. DNA Copy Number Selection Using Robust Structured Sparsity-Inducing Norms. *IEEE Transactions on Computational Biology and Bioinformatics (IEEE-TCBB)*. (To appear)
- [2] C. McMurrough, **V. Metsis**, D. Kosmopoulos, I. Maglogiannis and F. Makedon. A Dataset for Point of Gaze Detection using Head Poses and Eye Images. *To appear in Journal on Multimodal User Interfaces*, 2013.
- [3] **V. Metsis**, D. Kosmopoulos, V. Athitsos, and F. Makedon. Non-Invasive Analysis of Sleep Patterns via Multimodal Sensor Input. *Personal and Ubiquitous Computing (2012): 1-8*. doi:0010.1007/s00779-012-0623-1
- [4] **V. Metsis**, H. Huang, O. C. Andronesi, F. Makedon, and A. Tzika. Heterogeneous data fusion for brain tumor classification", *Oncology reports*, 2012. doi:0010.3892/or.2012.1931

PEER-REVIEWED  
CONFERENCE  
PUBLICATIONS

- [5] K. Dela Rosa, **V. Metsis**, and V. Athitsos. Boosted ranking models: a unifying framework for ranking predictions. *Knowledge and information systems* 30.3 (2012): 543-568. doi:0010.1007/s10115-011-0390-8
- [6] C. Doukas, **V. Metsis**, E. Becker, Z. Le, F. Makedon, and I. Maglogiannis. Digital cities of the future: Extending@ home assistive technologies for the elderly and the disabled. *Telematics and Informatics* 28, no. 3 (2011): 176-190. doi:0010.1016/j.bbr.2011.03.031
- [7] **V. Metsis**, P. Jangyodsuk, V. Athitsos, M. Iversen and Fillia Makedon. Computer Aided Rehabilitation for Patients with Rheumatoid Arthritis. To appear in: *Proceedings of CPS workshop, International Conference on Computing, Networking and Communications (ICNC) 2013*.
- [8] C. D. McMurrough, **V. Metsis**, J. Rich, and F. Makedon. An eye tracking dataset for point of gaze detection, In: *Proceedings of the Symposium on Eye Tracking Research and Applications*, pp. 305-308. ACM, 2012. doi:0010.1145/2168556.2168622
- [9] C. D. McMurrough, J. Rich, **V. Metsis**, A. Nguyen and F. Makedon. Low-cost head position tracking for gaze point estimation. In: *Proceedings of the 5th International Conference on Pervasive Technologies Related to Assistive Environments*, p. 22. ACM, 2012. doi:0010.1145/2413097.2413125
- [10] Z. Zhang, W. Liu, **V. Metsis**, and V. Athitsos. A Viewpoint-Independent Statistical Method for Fall Detection. In: *Proceedings of the International Conference on Pattern Recognition (ICPR)*. 2012.
- [11] **V. Metsis**, G. Galatas, A. Papangelis, D. Kosmopoulos, and F. Makedon. Recognition of sleep patterns using a bed pressure mat. In: *Proceedings of the 4th International Conference on Pervasive Technologies Related to Assistive Environments*, p. 9. ACM, 2011. doi:0010.1145/2141622.2141633
- [12] A. Papangelis, **V. Metsis**, J. Shawe-Taylor, and F. Makedon. Sensor placement and coordination via distributed multi-agent cooperative control. In: *Proceedings of the 3rd International Conference on Pervasive Technologies Related to Assistive Environments*, p. 14. ACM, 2010 doi:0010.1145/1839294.1839311
- [13] K. Park, Y. Lin, **V. Metsis**, Z. Le, and F. Makedon. Abnormal human behavioral pattern detection in assisted living environments. In: *Proceedings of the 3rd International Conference on Pervasive Technologies Related to Assistive Environments*, p. 9. ACM, 2010. doi:0010.1145/1839294.1839305
- [14] **V. Metsis**, H. Huang, F. Makedon, and A. Tzika. Heterogeneous Data Fusion to Type Brain Tumor Biopsies. In: *Proceedings of the 5th IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI'2009)*, April 23-25, 2009, Thessaloniki, Greece, Springer, 2009, p. 233. doi:0010.1007/978-1-4419-0221-4\_28
- [15] R. Arora, **V. Metsis**, R. Zhang, and F. Makedon. Providing QoS in ontology centered context aware pervasive systems. In: *Proceedings of the 2nd International Conference on Pervasive Technologies Related to Assistive Environments*, ACM, 2009, p. 8. doi:0010.1145/1579114.1579122
- [16] I. Ahmad, R. Arora, D. White, **V. Metsis**, and R. Ingram. Energy-Constrained Scheduling of DAGs on Multiprocessors. In: *Proceedings of the International Conference on Contemporary Computing (IC3 2009)*, IIIT University, Noida, 2009. doi:0010.1007/978-3-642-03547-0\_56

- [17] E. Becker, **V. Metsis**, R. Arora, J. Vinjumur, Y. Xu, and F. Makedon. SmartDrawer: RFID-based smart medicine drawer for assistive environments In: *Workshop on "Affect and Behaviour Related Assistance in Support for the Elderly (ABRA 2009)", Proceedings of the 2nd International Conference on PErvasive Technologies Related to Assistive Environments, ACM, 2009, p. 49.* doi:0010.1145/1579114.1579163
- [18] **V. Metsis**, Z. Le, Y. Lei, and F. Makedon. Towards an evaluation framework for assistive environments" In: *Proceedings of the 1st international conference on PErvasive Technologies Related to Assistive Environments, ACM, 2008, p. 12.* doi:0010.1145/1389586.1389601
- [19] K. Stamatakis, **V. Metsis**, V. Karkaletsis, M. Ruzicka, V. Svatek, V. E.A. Cabrera, and M. Polla. Content collection for the labeling of health-related web content. In: *Proceedings of the 11th Conference on Artificial Intelligence in Medicine (AIME 07), LNAI 4594, pp. 341-345, 2007. Amsterdam, 7-11 July, 2007.* doi:0010.1007/978-3-540-73599-1\_46
- [20] D.V. Gonzales, M.A. Mayer, A. Leis, V. Karkaletsis, K. Stamatakis, **V. Metsis**, P. Nasikas, M. Labsky, M. Ruzicka, V. Svatek, F. Lopez-Ostenero, V. Peinado, E.A. Cabrera, T. Honkela, M. Polla. AQUA (Assisting Quality Assessment): a system based on Semantic web and information extraction technologies to support medical quality labelling agencies. In: *Proceedings of the 12th World Congress on the Internet in Medicine (Mednet 2007), Leipzig , Germany , October 7-10, 2007.* [PDF]
- [21] **V. Metsis**, I. Androutopoulos and G. Paliouras. Spam Filtering with Naive Bayes – Which Naive Bayes?. In: *Proceedings of the 3rd Conference on Email and Anti-Spam (CEAS 2006), Mountain View, CA, USA, 2006.* [PDF]
- [22] V. Karkaletsis, K. Stamatakis, **V. Metsis**, V. Redoumi, D. Tsarouhas. Health-related Web Content: quality labelling mechanisms and the MedIEQ approach. In: *Proceedings of the 4th International Conference On Information Communication Technologies in Health, Samos 2006, Greece.* [PDF]
- CONFERENCE POSTERS [23] **V. Metsis**, O. C. Andronesi, H. Huang, M. N. Mindrinos, L. G. Rahme, F. Makedon, and A. A. Tzika. Combination of Sparse and Wrapper Feature Selection from Multi-Source Data for Accurate Brain Tumor Typing. In: *Proceedings of the International Society for Magnetic Resonance in Medicine (ISMRM) 19th Annual Meeting Exhibition, 7-13 May 2011, Montreal, Canada.* [PDF]

STUDENT ADVISING

*As a Ph.D. candidate and later as a Research Assistant Professor at Heracleia Human-Centered Computing Lab, I have had the opportunity to mentor a number of graduate and undergraduate students, including:*

**Jonathan Rich.**

M.S. student in Computer Science and Engineering, University of Texas at Arlington. *Thesis:* Point-of-Gaze applications for Assistive Interaction, 2012.

**Roman Arora.**

M.S. student in Computer Science and Engineering, University of Texas at Arlington. *Thesis:* Enabling context-aware applications in assistive environments, 2009.

**David Paulk.**

B.S. student in Computer Science, Princeton University. REU Intern at Heracleia Lab, Summer 2013. Research in development of object recognition methods to assist people with severe motor disabilities.

**Michael Gardner.**

B.S. student in Biomedical Engineering, Purdue University. REU Intern at Heracleia Lab, Summer 2011 & 2012. Research in attention problems and fNIRS brain imaging in children with Cerebral Palsy.

**Matthew Smith.**

B.S. student in Computer Science, Brown University. REU Intern at Heracleia Lab, Summer 2012. Research in fNIRS brain imaging in children with Cerebral Palsy.

**Scott Phan, An Nguyen, Ajayi Olalekan, Kevin Nathaniel and Ian Jungmann**

B.S. students in Computer Science Engineering dept. of UTA. Development of Rehabilitative Games for children with Cerebral Palsy.

**Harris Enotiades.**

B.S. student in Mechanical and Aerospace Engineering dept. of UTA. REU Intern at Heracleia Lab. Development of assistive robotic devices.

PROFESSIONAL  
ACTIVITIES

**Conference Service**

- Session Co-Chair: “Smart Rehabilitation Technologies” at Human-Computer Interaction International (HCII 2014).
- Organizing Committee at the International Conference on PErvasive Technologies Related to Assistive Environments (PETRA 2008-2014).
- Program Committee at the 5th International Conference on PErvasive Technologies Related to Assistive Environments (PETRA 2012-2014).
- Program Committee at the 16th PanHellenic Conference on Informatics (PCI '12).
- Program Committee at the Biotechnology and Bioinformatics Symposium (BIOT-2008)

**Referee Service**

- Journal of Machine Learning Research (JMLR)
- IEEE Transactions on Knowledge and Data Engineering (IEEE-TKDE)
- IEEE Transactions on Information Technology in Biomedicine (IEEE-TITB-EMBS)
- IEEE Transactions on Mobile Computing (IEEE-TMC)
- Springer Personal and Ubiquitous Computing
- Springer Universal Access in the Information Society
- Springer Artificial Intelligence Review
- Elsevier Journal of Systems and Software
- Elsevier Artificial Intelligence in Medicine (AIIM)
- Elsevier Computer Methods and Programs in Biomedicine
- Journal of Parallel and Distributed Computing
- Journal of Network and Computer Applications
- International Journal on Digital Libraries (ECDL)
- Health Informatics Journal
- International Conference on PErvasive Technologies Related to Assistive Environments (PETRA 2008-2012)
- 16th PanHellenic Conference on Informatics
- International Conference on Artificial Intelligence Applications and Innovations (AIAI)
- Symposium on Eye Tracking Research & Applications (ETRA 2012)
- Workshop on Artificial Intelligence Applications in Biomedicine (AIAB 2012)

**Memberships**

- Member of IEEE

SOFTWARE  
SKILLS

**Computer Programming:**

- Java, C, C++, C#, UNIX shell scripting, AWK, GNU make, SQL, Lisp, and others.

Numerical Analysis:

- MATLAB, R, Octave.

Systems Administration:

- *Operating Systems*: UNIX, Linux, Windows.
- *Servers*: Apache, IIS, MySQL, Postgresql, Tomcat, Glassfish, JBoss, MS SQL Server, SVN Subversion Server.

Development Platforms:

- Netbeans, Eclipse, Matlab, MS Visual Studio.

Web Development:

- HTML, JSF, PHP, ASP, JavaScript, XML, SOAP, RDF.

AWARDS

- PETRA Conference 2008-2011, NSF Student Travel Award
- Q-Invest Graduate Student Fellowship 2008
- Demokritos Research Fellow 2006-2007
- Honored talk at the B.Sc. graduation ceremony as the student with the highest GPA in the class (November 2005).

REFERENCES  
AVAILABLE TO  
CONTACT

**Dr. Fillia Makedon** (e-mail: makedon@uta.edu; phone: +1-817-272-3605)

- Jenkins Garrett Distinguished Professor,  
Department of Computer Science and Engineering  
University of Texas at Arlington
- ◇ PO Box 19015 Arlington, TX 76019-0015, USA
- ★ *Dr. Makedon was my graduate co-adviser and is the director of Heracleia Lab, which I am currently affiliated with.*

**Dr. Heng Huang** (e-mail: heng@uta.edu; phone: +1-817-272-7287)

- Associate Professor,  
Department of Computer Science and Engineering  
University of Texas at Arlington
- ◇ PO Box 19015 Arlington, TX 76019-0015, USA
- ★ *Dr. Huang was my graduate co-adviser.*

**Dr. Vassilis Athitsos** (e-mail: athitsos@uta.edu; phone: +1-817-272-0155)

- Associate Professor,  
Department of Computer Science and Engineering  
University of Texas at Arlington
- ◇ PO Box 19015 Arlington, TX 76019-0015, USA
- ★ *Dr. Athitsos has been a co-author in a number of peer-reviewed publications and a collaborator in the NSF funded projects NSF-CNS 0923494 and NSF-CNS 1035913.*