

Hasan Ertan Çetingül

CONTACT INFORMATION	Center for Imaging Science Department of Biomedical Engineering Johns Hopkins University 319 Clark Hall 3400 North Charles Street Baltimore, MD 21218 USA	<i>Web:</i> www.cis.jhu.edu/~ertan <i>E-mail:</i> ertan@cis.jhu.edu <i>Tel:</i> (443) 710-2092 <i>Fax:</i> (410) 516-4594
RESEARCH INTERESTS	Medical Image Analysis: Deterministic/stochastic fiber tracking, processing of DWI Computer Vision: Manifold clustering for motion segmentation and object categorization Biometrics: Audiovisual speaker & speech recognition, analysis of lip articulation	
EDUCATION	Johns Hopkins University (JHU) , Baltimore MD, USA Ph.D., Biomedical Engineering Advisor: Dr. René Vidal	09/2005 - Present
	Koç University , Istanbul, Turkey M.S., Electrical & Computer Engineering Advisors: Drs. A. Murat Tekalp, Engin Erzin, Yücel Yemez	09/2003 - 07/2005
	Middle East Technical University (METU) , Ankara, Turkey B.S., Electrical & Electronics Engineering (GPA: 3.73/4.00) Minor, Business Administration (GPA: 3.35/4.00)	09/1998 - 06/2003
	Izmir Saint Joseph French High School , Izmir, Turkey High school diploma, graduated as valedictorian (GPA: 5.00/5.00)	09/1991 - 06/1998
RESEARCH EXPERIENCE	Johns Hopkins University , Baltimore MD, USA Research Assistant in Vision, Dynamics & Learning Lab	09/2005 - Present
	<ul style="list-style-type: none">- Currently working on developing deterministic/stochastic tractography techniques in 3-D images with applications on cardiac Purkinje fibers and coronary arteries as well as devising a robust bifurcation detector.- Currently investigating novel methods for estimation and registration of diffusion weighted (DW) images.- Developed an intrinsic mean shift formulation for clustering on Stiefel & Grassmann manifolds with applications on object categorization & motion segmentation.- Developed a filtering technique to extract directional maps in 2-D, 3-D images.- Developed a system theoretic approach for speaker recognition & synthesize visual speech from lip articulation.- Investigated graph theoretic algorithms for object tracking and medical image segmentation.	
	Koç University , Istanbul, Turkey Research Assistant in Multimedia, Vision & Graphics Lab	09/2003 - 07/2005
	<ul style="list-style-type: none">- Developed a two-stage discriminative analysis technique to determine optimal lip motion features for speaker identification and speech-reading and contributed to European FP6 Network of Excellence SIMILAR project on human-computer interaction.- Gained expertise at biometrics including lip articulation, face recognition and audiovisual speech/speaker recognition.	
	Swiss Federal Institute of Technology (EPFL) , Lausanne, Switzerland Visiting Researcher in Signal Processing Institute	08/2004
	<ul style="list-style-type: none">- Implemented algorithms for automatic lip contour extraction.- Investigated spatial-temporal correlation between lip articulation & speech signal.	

INDUSTRIAL
EXPERIENCE

- Siemens Corporate Research**, Princeton NJ, USA 06/2009 - 09/2009
Research Intern in Imaging & Visualization Department
- Developed novel algorithms for the analysis of coronary arteries including tracking, segmentation and bifurcation detection.
- MED-EL Inc.**, Innsbruck, Austria 08/2002 - 09/2002
Summer Intern in Test Department
- Performed software & hardware testing for cochlear implants.
- Philips Medical Systems**, Izmir, Turkey 06/2002 - 07/2002
Summer Intern in Customer Service & Maintenance
- Performed imaging modality & RIS-PACS system maintenance.
- Aselsan Inc.**, Ankara, Turkey 06/2001 - 07/2001
Summer Intern in Public Communication Systems
- Performed programming/testing handheld analog radios.

PUBLICATIONS

Journal Publications, Theses & Book Chapters

1. H.E. Çetingül, G. Plank, N. Trayanova, and R. Vidal. *Automatic delineation of branching fibrous structures in 3-D images: An application to Purkinje system in cardiac MRI*. In preparation on Medical Image Analysis.
2. H.E. Çetingül, E. Erzin, Y. Yemez, and A.M. Tekalp. *Multimodal speaker identification using discriminative lip motion features*. In A. Liew, S. Wang (Eds.), Visual Speech Recognition: Lip Segmentation and Mapping, pp. 463–494, IGI Global, 2009.
3. H.E. Çetingül, E. Erzin, Y. Yemez, and A.M. Tekalp. *Multimodal speaker/speech recognition using lip motion, lip texture and audio*. Signal Processing, Special Section: Multimodal Human-Computer Interfaces, Vol. 86, No. 12, pp. 3549–3558, December 2006.
4. H.E. Çetingül, Y. Yemez, E. Erzin, and A.M. Tekalp. *Discriminative analysis of lip motion features for speaker identification and speech-reading*. IEEE Transactions on Image Processing, Vol. 15, No. 10, pp. 2879–2891, October 2006.
5. H.E. Çetingül. *Discrimination analysis of lip motion features for multimodal speaker identification and speech-reading*. M.S. Thesis, Electrical & Computer Engineering, Koç University, July 2005.

Conference/Workshop Proceedings

1. H.E. Çetingül, G. Plank, N. Trayanova, and R. Vidal. *Stochastic tractography in 3-D images via nonlinear filtering and spherical clustering*. Probabilistic Models for Medical Image Analysis (PMMIA'09) workshop at MICCAI'09, London, UK, September 2009. (**talk**)
2. H.E. Çetingül, G. Plank, N. Trayanova, and R. Vidal. *Estimation of multimodal orientation distribution functions from cardiac MRI to track Purkinje fibers through branchings*. IEEE Int. Symposium on Biomedical Imaging (ISBI'09), Boston MA, USA, June 2009. (**talk**)
3. H.E. Çetingül, and R. Vidal. *Intrinsic mean shift for clustering on Stiefel and Grassmann manifolds*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR'09), Miami Beach FL, USA, June 2009. (**poster**)
4. H.E. Çetingül, R. Vidal, G. Plank, and N. Trayanova. *Nonlinear filtering for extracting orientation and tracing tubular structures in 2-D medical images*. IEEE Int. Symposium on Biomedical Imaging (ISBI'08), pp. 260–263, Paris, France, May 2008. (**talk**)
5. H.E. Çetingül, R. Chaudhry, and R. Vidal. *A system theoretic approach to synthesis and classification of lip articulation*. Int. Workshop on Dynamical Vision (WDV'07) at ICCV'07, Rio de Janeiro, Brazil, October 2007. (**talk**)
6. H.E. Çetingül, E. Erzin, Y. Yemez, and A.M. Tekalp. *Use of lip information for robust speaker identification and speech recognition*. Biennial on DSP for In-Vehicle and Mobile Systems, Sesimbra, Portugal, September 2005. (**talk**)

7. H.E. Çetingül, Y. Yemez, E. Erzin, and A.M. Tekalp. *Comparative lip motion analysis for speaker identification*. IEEE Conference on Signal Processing and Communications (SIU'05), pp. 300–303, Kayseri, Turkey, May 2005. (**talk**)
8. H.E. Çetingül, Y. Yemez, E. Erzin, and A.M. Tekalp. *Robust lip-motion features for speaker identification*. IEEE Int. Conference on Acoustics, Speech and Signal Processing (ICASSP'05), Vol. 1, pp. 509–512, Philadelphia PA, USA, March 2005. (**poster**)
9. H.E. Çetingül, Y. Yemez, E. Erzin, and A.M. Tekalp. *Discriminative lip-motion features for biometric speaker identification*. IEEE Int. Conference on Image Processing (ICIP'04), Vol. 3, pp. 2023–2026, Singapore, October 2004. (**poster**)
10. H.E. Çetingül, E. Erzin, Y. Yemez, and A.M. Tekalp. *On optimal selection of lip-motion features for speaker identification*. IEEE Workshop on Multimedia Signal Processing (MMSP'04), pp. 7–10, Siena, Italy, September 2004. (**talk**)
11. H.E. Çetingül, Y. Yemez, E. Erzin, and A.M. Tekalp. *The use of lip-motion features in biometric speaker identification*. IEEE Conference on Signal Processing and Communications (SIU'04), pp. 148–151, Aydın, Turkey, April 2004. (**talk**)

SKILLS

Operating systems: Windows 98 or higher, Linux, Mac OS

Tools & Programming: (Visual) C/C++, Matlab, OpenCV, ITK, HTK, Xilinx, HP Vee

Languages: English (fluent), French (fluent), Turkish (native)

HONORS & AWARDS

- Listed in Marquis Who's Who in the World, 27th Edition, 2010
- ISBI travel grant award (for top student papers submitted to ISBI'08), NIH, 2008
- Graduate Representative Organization (GRO) travel award, JHU, 2007
- Ph.D. study fellowship in biomedical engineering, JHU, 2005
- M.S. study merit scholarship, Turkish Science & Technology Foundation (TUBITAK), 2005
- Vehbi Koç scholarship for graduate study, Koç University, 2003
- Ranked 15th in graduating class among 209 seniors, METU, 2003
- Best senior design project award, Electrical & Electronics Engineering, METU, 2003
- High honors' list (6 semesters), Honors' list (2 semesters), Electrical & Electronics Engineering, METU, 1999-2003
- Ranked 604th among ~1.5 million high school seniors in university entrance exam, 1998
- Valedictorian, Izmir Saint Joseph French High School, 1998

REFERENCES

Dr. René Vidal

Assistant Professor, Department of Biomedical Engineering
Johns Hopkins University, Baltimore MD, USA
E-mail: rvidal@cis.jhu.edu

Dr. Natalia Trayanova

Professor, Department of Biomedical Engineering
Johns Hopkins University, Baltimore MD, USA
E-mail: ntrayanova@jhu.edu

Dr. A. Murat Tekalp

Professor, Electrical & Electronics Engineering
Koç University, Istanbul, Turkey
E-mail: mtekalp@ku.edu.tr