

Ender Konukoglu

PhD in Computer Science

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Education

INRIA Sophia Antipolis, University of Nice-Sophia Antipolis

PhD in Medical Image Analysis, Computer Science, February 2009

Supervisor: Prof. Nicholas Ayache

Thesis: *Modeling Glioma Growth and Personalizing Growth Models in Medical Images*

Stanford University, 3D Radiology Lab,

Visiting Researcher, 2004 summer

Supervisors: Prof. Sandy Napel and Prof. Christopher Beaulieu

Bogazici University, Electrical and Electronics Engineering

MSc in Telecommunications, 2005, GPA: 4.0/4.0,

Supervisor: Assist. Prof. Burak Acar

Thesis: *Polyp Enhancing Level-Sets for CT Colonography*

BSc in Electrical and Electronics Engineering, 2003,

GPA: 3.89/4.0, With High Honor,

GPA (major): 3.98/4.0

Ranked 1st in the graduating class of EE in 2003

Ranked 2nd in the graduating class of engineering faculty in 2003

Istanbul American Robert College

High School Diploma in General Science, 1999

Medium of instruction: English

Projects, Scholarships and Work Experience

2009 March - *Expert Engineer/Research Fellow: INRIA Sophia Antipolis*

present

- Conducting research on mathematical models for tumor growth
- Working on the research collaboration CompuTumor between INRIA Sophia Antipolis and MIT-Harvard.
- Linking state-of-the-art research to viable tools for clinical research and applications.

2006-2009 *Research Project: CompuTumor; Collaboration for research on tumor growth modelling between INRIA Sophia Antipolis, Harvard Medical School and*

Massachusetts Institute of Technology (within the framework of the doctoral thesis).

- Conducting research on mathematical modeling of tumor growth.
- Hands on experience with biological modeling, image processing, partial differential equations, probability, time series analysis.

- 2005-2008 *Research Project: Pan-European Health-e-Child, In collaboration with Siemens Medical Systems, Erlangen, Germany (within the framework of the doctoral thesis).*
- Conducting research on mathematical modeling of tumor growth.
 - Finding practical solutions to applying current research on the Paediatric cases.
- 2005-2008 *Regional scholarship for doctoral thesis, Department of PACA, France*
- 2003-2005 *Research Project: Virtual Colonoscopy, In collaboration with 3D Radiology Lab, Stanford University, USA (within the framework of the M.S. thesis).*
- Conducted research on Computer Aided Diagnosis (CAD) tools for Computed Tomography (CT) Colonography
- 2003-2005 *Research Assistantship, Bogazici University, Department of Electrical and Electronics Engineering, Istanbul, Turkey.*
- Conducted research on CAD tools for CT Colonography.
 - Conducted research on medium security biometry
- 2003-2005 *Teaching Assistantship, Bogazici University, Department of Electrical and Electronics Engineering, Istanbul, Turkey.*
- Gave courses and conducted problem solving sessions on Probability and Numerical Analysis.
 - Instructed and helped students who had difficulties in the course.
- 2002 summer *Internship at BEKO Electronics, Istanbul, Turkey.*
- Conducted technical research on Real Time Operating Systems and their potential use in BEKO products.
 - A research report on the available technologies and the appropriate use of this technology in the product line has been prepared and discussed.
- 1999-2002 *Private tutoring*
- Given courses of mathematics and physics to high school students with difficulties.

Awards and Mentions

- 2005 EUSIPCO Student Paper Award, 3rd place
- 2004 *Alper Atalay Award*, Best student paper in IEEE-SIU conference
- 2003 *Nadir Orhan Bengisu Award*, Ranked 1st among the graduating class of Electrical Engineering at Bogazici University
- 1999 Ranked 17th among 1.5 million candidates in the university entrance exam (OSS'99)

Personal Skills

- Languages** Turkish (native speaker)
English (verse, TOEFL=283/300)
French (fluent)
- Specialization** Partial differential equations, level-set methods, variational calculus, differential geometry, biological modeling (oncology), medical image analysis, image/signal processing (time series analysis).
- Computer** C++, Java, MATLAB, ITK, VTK, Linux, Windows, Latex, Microsoft PowerPoint, Word and Excel.

Additional Information

- Websites** www.wapur.com, a website for searching and advertising housing in Turkey,

more than 25,000 of registered users.

Activities

Basketball, High School Team (1993-2001), University Team (1999-2002)
Swimming, Rock Climbing, Drawing

Publications

Patents and Book Chapters

Tumor growth modeling in oncological image analysis, **Konukoglu E.**, Pennec X., Clatz O. and Ayache N., To be published in Handbook of Medical Image Processing and Analysis 2, Edited by Isaac Bankman, Elsevier.

Methods for Detecting and Identifying 3D Structures with Built-in Enhancement Schemes, **Konukoglu E.**, Acar B., Beaulieu C.F. and Napel S. Disclosure with Stanford University, Office of Technology Licensing, CA, for future patent applications, 2005.

Journals

Image Guided Personalization of Reaction-Diffusion Type Tumor Growth Models Using Modified Anisotropic Eikonal Equations, **Konukoglu E.**, Clatz O., Menze H. B., Weber, M.-A., Stieltjes B., Mandonnet E., Delingette H., Ayache N., Submitted to IEEE Tran. Medical Imaging, 2008.

Extrapolating glioma invasion margin in brain magnetic resonance images: Suggesting new irradiation margins, **Konukoglu E.**, Clatz O., Bondiau P.-Y., Delingette H. and Ayache N., Submitted to Medical Image Analysis, 2008.

Glioma Dynamics and Computational Models: A Review of Segmentation, Registration, and In Silico Growth Algorithms and their Clinical Applications. Angelini E., Clatz O., Mandonnet E., **Konukoglu E.**, Capelle L. and Duffau H., Current Medical Imaging Reviews, Vol 3., 2007.

Polyp enhancing level set evolution of colon wall: Method and pilot study, **Konukoglu E.**, Acar B., Paik S.D., Beaulieu F. C., Rosenberg J. and Napel S., IEEE Transactions on Medical Imaging, Vol. 26, No. 12, December 2007.

HDF: Heat diffusion fields for polyp detection in CT colonography, **Konukoglu E.** and Acar Burak. Signal Processing, Vol. 87, 2007.

Modèles Biomathématiques de Croissance Des Gliomes : Recherche en Informatique et Perspectives en Neuro-oncologie, Clatz O., Mandonnet E., Chanalet S., Lebrun C., **Konukoglu E.**, Delingette H., Ayache N. and Bondiau P.-Y., Neurologies, Vol. 9, No. 93, 2006.

Shape-Based Hand Recognition Yoruk E., **Konukoglu E.**, Sankur B. and Darbon J. IEEE Transactions on Image Processing, Vol. 15, No. 7, July 2006.

Conferences and Invited Talks

Monitoring Slowly Evolving Tumors, **Konukoglu E.**, Wells W.M., Novellas S., Ayache N., Kikinis R., Black P.M. and Pohl K.M., Proc. ISBI'08, Paris, France.

Towards and Identification of tumor growth parameters from time series of images, **Konukoglu E.**, Clatz O., Bondiau P.-Y., Sermesant M., Delingette H. and Ayache N., Proc. MICCAI 2007, Brisbane, Australia.

A recursive anisotropic fast marching approach to reaction diffusion equation: Application to tumor growth modeling, **Konukoglu E.**, Sermesant M., Clatz O., Peyrat J.-M., Delingette H. and Ayache N., IPMI 2007, Kerkrade, Netherlands.

Mathematical Tumor Growth Models, Philips High Tech Center 2007, Eindhoven, Netherlands.

An anisotropic multi-front fast marching method for real-time simulation of cardiac electrophysiology, Sermesant M., **Konukoglu E.**, Delingette H., Coudiere Y., Chinchaptanam P., Rhode K.S., Razavi R. and Ayache N., FIMH 2007, Utah, USA.

Extrapolating tumor invasion margins for physiologically determined radiotherapy regions, **Konukoglu E.**, Clatz O., Bondiau P.-Y., Delingette H. and Ayache N., Proc MICCAI 2006, Copenhagen, Denmark.

Polyp Enhancement Scheme for Improved Detection of Colonic Polyps in CT Colonography, **Konukoglu E.**, Acar B., Paik D.S., Beaulieu C.F. and Napel S. RSNA 2005, Chicago, IL, USA.

Heat Diffusion Based Detection Of Colonic Polyps In CT Colonography, **Konukoglu E.**, Acar B., Paik D.S., Beaulieu C.F. and Napel S., Proceedings of EUSIPCO 2005, Antalya, Turkey.

Computer Aided Detection Of Polyps In Virtual Colonoscopy Using 3D Heat Diffusion Fields, **Konukoglu E.**, Acar B., Paik D.S., Beaulieu C.F. and Napel S. Proceedings of the 5th International Symposium on Virtual Colonoscopy, Boston, MA, USA

Person Authentication Based on Hand Shape, Yoruk E., **Konukoglu E.**, Sankur B. and Darbon J. 12th European Signal Processing Conference (EUSIPCO '04) Vienna, Austria September 2004