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Objective: To design computer vision, and machine learning algorithms that will enhance the consumers' experience in the way they interact with machines.

Education:

- Ph.D. in **Electrical Engineering**, Stanford University, June 2002. GPA: 3.9. PhD thesis has been defended on October 5, 2001.
Thesis Topic: 'Shape Recognition With Application to Medical Imaging'
- M.S. in **Electrical Engineering**, Stanford University, GPA: 3.9, April 2001. Focus on the following: Computer Vision, Image Processing, Fourier transformation, statistical signal processing, robotics, graphics, vector quantization, artificial intelligence, numerical linear algebra, image and video compression.
- B.S. in **Electrical Engineering** (Communication Engineering Subdivision) from Bogazici University, Turkey. (1999) GPA: 3.77/4.00, 2nd in EE Department. Course work includes: math, physics, chemistry, communication engineering, computer networks, digital signal processing, digital image processing, control theory, introduction to electronic design.
- B.S. in **Computer Science (called computer engineering in Turkey)**, from Bogazici University, Turkey. (1999) GPA: 3.77/4.00, 1st in CS Department. Course work includes: probability theory, algorithm design, automata theory, databases, computer architecture, object oriented design, theory of programming languages, digital design, software engineering.

Qualifications and Technical Expertise

- Computer Vision, Digital image, video and signal Processing, Image and video Compression, Statistical Classification, Image and video analysis, Machine Learning.

Technical Activities

- Organizer of the First International Workshops on "Real-Time 3D Systems and Their Use" in conjunction with CVPR 2004, Washington.
- Reviewer/associate editor for Medical Physics, IEEE Transactions on Pattern Analysis and Machine Vision, International Journal on Cell Biology, ACM Computer Surveys, IEEE Transactions on Medical Imaging, International Conference on Computer Vision and Pattern Recognition (CVPR)

Professional Experience:

- Ojos Inc. – Chief Technology Officer - 03/2005-current
 - Responsible for constructing and leading the research team. The team responsibilities include research, and implementation of various computer vision and machine learning algorithms with application to consumer markets.
- Canesta Inc. – Algorithm Architect 04/2002-03/2005
 - Research, development and implementation of computer vision, image processing and statistical classification algorithms for various tasks, including:
 - Face detection, recognition, tracking
 - Gesture recognition
 - Occupant classification
 - Human form tracking

- More efficient compression systems
- Structured light systems
- Calibration of vision systems
- virtual ruler
- virtual keyboard
- Stanford University - Research Assistantship in Robotics Laboratory 09/1999 – 03/2002
 - “Recognition of shapes using the combination of a new shape representation method and Support Vector Machine classifier”, 2001.
 - "Detection of Polyps Using 3D Volumetric Data Processing applied to CT volumes, a morphological approach", a morphology based approach that involves fitting spheres to the colon surface, 2000.
 - “Recognition of expressions on human face”, the features obtained from monocular face tracker were fed to a Support Vector Machine Classification for classification, 2001.
 - “A region of interest based approach for medical image compression”, a compression scheme that uses motion compensated coding as a prediction scheme, and entropy minimizing coder on diagnostically important regions, 2000.
- Intel Corp. - Internship with the computer vision research group June 2000- September 2000.
 - “Tracking the 3D pose and shape of the human face with a mono camera without using any markers”.
- BEKO Inc. – Research and development contract, June 98 – June 99.
 - “Automated Recognition of Remote Control devices” for BEKO, Turkey. A vector based method for classification, 1999.
 - “Automated Inspection of PCBs” – A pattern based method to automated inspection using statistical analysis, 1999.
 - “Automated Inspection of PCBs” – Content based approach to automated inspection. Knowledge from image processing, computer vision and graph theory has been used, 1998.
- ENKO Inc., internship, June 97 - September 97.
 - The hardware and software implementation of an RS-232 interface card.
- Alcatel, internship, January 97 – March 97.
 - The hardware and software implementation of an intelligent voice response system.
- Bogazici University – Student assistantship - academic year of 1998.
 - “Distant Learning Site”, a WEB site for distant learning. Java, JDBC, SQL and Java Servlet have been used for communication through network and database access.
 - Programming on Network - A chat program using datagrams. Java has been used as a programming language.

Computer Experience:

- Programming Languages: Basic, C, C++, Pascal, Java, Matlab, Html, Java Servlets and JDBC, SQL, Sybase, assembly languages.
- Package Programs: Microsoft Office, Visio, Pspice, Adobe Illustrator.
- Operating Systems: Windows 98, Dos, Unix, Minix.

Publications:

- Gokturk SB, "An Occupant Classification System - Eigen Shapes or Knowledge-Based Features", submitted to Computer Vision and Pattern Processing, CVPR 2005.
- Billelo M, Gokturk SB, Desser T, Napel S, Jeffrey B, Jr., Beaulieu CF, "Automatic Detection and Classification of Hypodense Hepatic Lesions on Contrast-Enhanced Venous-Phase CT", Medical Physics 31(9) :2584-93, 2004.
- Gokturk SB, Yalcin H, Bamji C, "A Time-of-flight Depth Sensor, System Description, Issues and Solutions", on IEEE Workshop on "Real-Time 3D Sensors and Their Use" in conjunction with IEEE Conference on Computer Vision and Pattern Recognition, CVPR , Washington DC, USA, 2004.
- Gokturk SB, Tomasi C, "3D Head Tracking Based on Recognition and Interpolation Using a Time-Of-Flight Depth Sensor", in Proceedings of Computer Vision and Pattern Processing, CVPR , Washington DC, USA, 2004.
- Gokturk SB, "A Time-Of-Flight Sensor and an Application to Head Tracking", in the demo sessions in the proceedings of Computer Vision and Pattern Processing, CVPR , Washington DC, USA, 2004.
- Salih Burak Gokturk, "3D head tracking based on recognition and interpolation using a time-of-flight depth sensor," in the Bay Area Vision Meeting, HP Labs, 2004.
- Salih Burak Gokturk, "An occupant Detection System Based on Time-Of-Flight Sensor," in the Great Lakes Photonics Symposium, Cleveland, Ohio, 2004.
- Spare J, Bamji C, Liu X, Gokturk SB, Rafii A, Roeber H, Tomasi C, "Everyday Devices that See: Electronic-Perception Technology", in Emerging Technologies, SIGGRAPH 2003, San Diego, July 2003.
- Billelo M, Gokturk SB, Napel S, Tomasi C, Jeffrey B, Jr., Beaulieu CF, "Automatic Detection of Hypodense Hepatic Lesions on Contrast-enhanced Venous-phase CT: Method and Evaluation ", accepted for publication in Radiological Society of North America 88th Scientific Sessions, Chicago, November 2002.
- Gokturk SB, Billelo M, Napel S, Tomasi C, Jeffrey B, Jr., Beaulieu CF, "Automatic Classification of Cysts and Metastases in Hepatic CT: Method and Evaluation", accepted for publication in Radiological Society of North America 88th Scientific Sessions, Chicago, November 2002.
- Gokturk SB, Bouguet JY, Tomasi C, Girod B, "Model-Based Face tracking for View-Independent Facial Expression Recognition", Face and Gesture Recognition, Washington D.C., May, 2002.
- Acar B, Beaulieu CF, Gokturk SB, Tomasi C, Paik D, Jeffrey B, Jr., Yee J, Napel S, Edge Displacement Field Based-Classification for Improved Detection of Polyps in CT Colonography, accepted to IEEE Transactions on Medical Imaging.
- Gokturk SB, Tomasi C, Acar B, Beaulieu CF, Paik D, Jeffrey B, Jr., Yee J, Napel S, A Statistical 3D Pattern Processing Method For Computer Aided Detection of Polyps in CT Colonography, in IEEE Transactions on Medical Imaging, Vol. 20, No 12, pages 1250-1260, December 2001.
- Gokturk SB, Tomasi C, Acar B, Paik DS, Beaulieu CF, Napel S, Statistical Approach for Computer Aided Diagnosis of Colonic Polyps, in Radiological Society of North America, 87th Scientific Sessions, Chicago, November 2001.
- Acar B, Beaulieu CF, Paik DS, Yee J, Tomasi C, Napel S, Gokturk SB, Jeffrey RB. "Computer Aided Detection of Colonic Polyps In CT Colonography Using Optical Flow Fields." in Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
- Gokturk SB, Tomasi C, A New 3-D Pattern Recognition Technique With Application to Computer Aided Colonoscopy, in the proceedings of Computer Vision and Pattern Processing, CVPR , Kauai, Hawaii, USA, 2001.

- Gokturk SB, Tomasi C, Acar B, Paik D, Beaulieu CF, Napel S, A New 3-D Volume Processing Method for Polyp Detection, in 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, Turkey, 2001- finalist for the best paper award.
- Gokturk SB, Tomasi C, Girod B, Beaulieu CF, Medical Image Compression Based on Region of Interest, with Application to Colon Ct Images, in 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, Turkey, 2001.
- Acar B, Beaulieu CF, Paik DS, Gökürk SB, Tomasi C, Yee J, Napel S, Assessment of an Optical Flow Field-Based Polyp Detector for Ct Colonography, in 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, Turkey.
- Acar B, Napel S, Paik D, Gökürk SB, Tomasi C, Beaulieu CF, Using Optical Flow Fields for Polyp Detection in Virtual Colonoscopy, in Medical Image Computing and Computer-Assisted Intervention 2001, Utrecht, Holland.
- Gokturk SB, Acar B, Paik D, Tomasi C, Beaulieu C, Napel S, “Recognizing Polyps from 3D CT Colon Data”, in Medical Image Computing and Computer-Assisted Intervention 2001, Utrecht, Holland.
- Gokturk SB., Bouguet JY, Grzeszczuk R, “A data driven model for monocular face tracking”, in International conference on computer vision, ICCV, 2001.
- Salih Burak Gokturk, Region of Interest Based Medical Image Compression, web report, please see the details at: <http://www.stanford.edu/~gokturkb/Compression/FinalReport.htm>, 2000.
- Salih Burak Gokturk, Shape Recognition with Application to Medical Imaging, web report, please see the details at: <http://robotics.stanford.edu/~gokturkb/medical/FinalReport.htm>, 2001.
- Salih Burak Gokturk, A survey on 3-D Segmentation, Modeling and Object Recognition, web report, please see the details at: <http://robotics.stanford.edu/~gokturkb/FinalReport.htm>, 2000.
- Salih Burak Gokturk, 3-D Face Tracking Based Facial Expression Recognition, web report, please see the details at: <http://robotics.stanford.edu/~gokturkb/expression/index.html>, 2000.
- Gokturk SB, Acar B, Paik D, Tomasi C, Beaulieu CF, Napel S, “Recognizing Polyps from 3D CT Colon Data”, Biomedical Computation at Stanford University, BCATS’2000, October 2000.
- Tomasi C, Gokturk SB, 'A graph method for the conservative detection of polyps in the colon', 2nd International Symposium on Virtual Colonoscopy, Boston, October 2000.
- Gokturk SB, Akarun L, Bozma I, "Automated Inspection of Printed Circuit Boards Using a Novel Approach" appeared in IEEE workshop on Nonlinear Signal and Image Processing. (NSIP'99), 1999.
- Gokturk SB, "Method For Automated Inspection of PCBs Using a Novel Approach To Edge Linking " submitted as senior project and also to the IEEE student contest, 1999.
- Gokturkb SB, Akarun L, Bozma I, "Baskili Devre Kartlarinin Yeni bir Yontemle Otomatik Denetimi" appeared in IEEE SIU'99.(Turkish conference on signal and image processing & Networking), 1999.
- Gokturk SB, Technical Report "Design of an RS-232 Interface Card" implemented for ENKO,Izmir, 1997.
- Gokturk SB, Technical Report "Design of a Voice Storage Card" implemented for Alcatel,Istanbul, 1997.

Patents

- Method and System for using a data-driven model for monocular face tracking. Status: Patent pending.
- Gesture recognition system using depth perceptive sensors, Status: Patent pending.
- Method and apparatus for recognizing objects Status: Patent pending.
- Method and apparatus for approximating depth of an object's placement onto a monitored region with applications to virtual interface devices Status: Patent pending.

- System and apparatus for approximating depth of an object's placement onto a monitored region with applications to virtual interface devices Status: Patent pending.
- Subject segmentation and tracking using 3D sensing technology for video compression in multimedia applications Status: Patent pending.
- Optical methods for remotely measuring objects Status: Patent pending.
- Occupancy detection and measurement system and method. Status: Patent pending.
- Method for detecting and classifying a structure of interest in medical images Status: Patent pending.
- System and method for providing intelligent airbag deployment. Status: Patent pending.
- Three-dimensional pattern recognition method to detect shapes in medical images. Status: Patent pending.
- A Method for Removing Motion Blur of Time-of-flight Sensors. Status: Patent pending.
- A Method for increasing the dynamic range of time of flight sensors. Status: Patent pending.
- Method for tagging images. Status: Patent pending.

Awards and Honors:

- Finalist for the best student paper award in appear in 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, Turkey, October 2001.
- Best Double Major Student award from Bogazici University in 1999.
- Recipient of scholarship by The Scientific and Technical Research Council of Turkey within the scope of the NATO Science fellowship programme. (1999)
- Recipient of Stanford University Assistantship for the graduate studies. (1999-2001)
- High Honor graduate from Bogazici University, 1999.
- 1st in Computer Science and 2nd in Electrical Engineering in Bogazici University, 1999.
- Participant of IEEE Student Paper Contest representing Bogazici University in 1998 with the project “ Automated Inspection of Printed Circuit Boards”.
- Among the 5 finalist, in the best industrial project competition in 1999, with the project “A Factory Machine for Quality Control of Remote Control Devices”. A joint project with BEKO Corporation, Turkey.
- Recipient of Super Dorm Scholarship from Bogazici University (1999)
- Recipient of Turkish Educational Association Scholarship (1994-1999) for the undergraduate studies.
- Recipient of Bogazici University Scholarship (1994-1995) for the undergraduate studies.
- Turkish Government Scholarship (1991-1994).
- 64th and 74th respectively in the first and second round of university entrance examination in Turkey, 1994 among more than a million candidates.
- 2nd (silver medal) in National Olympics of Chemistry in 1994. Awarded by minister of education of Turkey.
- Attendance of national team preparation camp for Olympics of Chemistry in 1993 and 1994, Olympics of Math in 1992.
- 1st in 135000 candidates in Government scholarship examination in 1991. Awarded by Prime Minister and the Minister of Education of Turkey.
- 1st in 100000 candidates in Teaching School’s examination in 1991. Awarded by Prime Minister and the Minister of Education of Turkey.
- 1st in 100000 candidates in Anatolian Schools examination in 1991. Awarded by Prime Minister and the Minister of Education of Turkey.
- 1st in 50000 candidates in Government scholarship examination in 1990. Awarded by Prime Minister and the Minister of Education of Turkey.