

AD-A264 692

MENTATION PAGE

Form Approved
OMB No. 0704-0188

2



estimated to average 10 minutes per page. The burden of this collection of information is estimated to average 10 minutes per page, including the time for reviewing the collection of information, searching existing data sources, gathering the data needed, reviewing the collection of information, and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Project, Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED FINAL/01 SEP 89 TO 31 OCT 92
4. TITLE AND SUBTITLE ANALYSIS OF VISUAL LOSS FROM RETINAL LESIONS (U)		5. FUNDING NUMBERS 2304/A5 AFOSR-89-0490
6. AUTHOR(S) Professor Harold Longbotham		8. PERFORMING ORGANIZATION REPORT NUMBER AFOSR-89-0490
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS University of Texas Nonlinear Signal Processing Lab San Antonio TX 78285		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) AFOSR/NM 110 DUNCAN AVE, SUTE B115 BOLLING AFB DC 20332-0001		10. SPONSORING MONITORING AGENCY REPORT NUMBER AFOSR-89-0490
11. SUPPLEMENTARY NOTES		
12a. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE: DISTRIBUTION IS UNLIMITED		12b. DISTRIBUTION CODE UL
13. ABSTRACT (Maximum 200 words) Progress was made during the course of the Grant on the application of Order Statistics and Neural Network modeling to analysis of the onset of retinal lesions. Several medical applications of WMMR filters were initiated, leading to a number of publications and conference presentations by the PI and his co-workers.		

DTIC
ELECTE
MAY 14 1993
S C D

03 5 12 121

93-10674



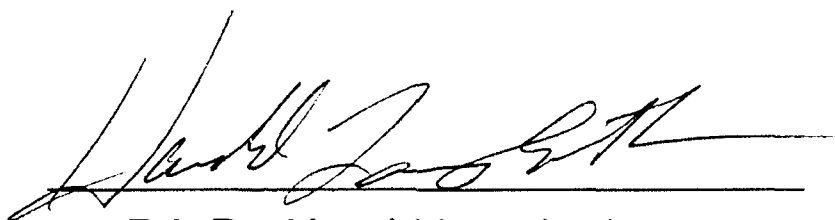
14. SUBJECT TERMS			15. NUMBER OF PAGES 3
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT SAR(SAME AS REPORT)

FINAL TECHNICAL REPORT

SEPT 1, 1989 - OCT 31, 1992

AFOSR contract # 89-0490

"Analysis of Visual Loss From Retinal Lesions"



**P.I. Dr. Harold Longbotham,
Nonlinear Signal Processing Lab
University of Texas at San Antonio**

September 23, 1992

Program Manager Dr. Jon Sjogren

Accession For	
NTIS	CRA&I ☒
DTIC	TAB ☐
Unannounced	☐
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

The following contains:

- (1) A list of the journal papers, conference papers, and invited lectures for the past year,
- (2) Report of inventions and subcontracts.

Invited Journal Papers:

"Statistical Properties, Fixed Points, and Decomposition With the WMMR Filters," Harold Longbotham, David Eberly, invited paper for special issue of the Journal on the Mathematics of Imaging and Vision", accepted to be published, Dec., 1992.

Refereed Journal Papers:

"Statistical Properties, Fixed Points, and Decomposition With the WMMR Filters," Harold Longbotham, David Eberly, invited paper for special issue of the Journal on the Mathematics of Imaging and Vision", accepted for publication, Dec., 1992.

"The WMMR Filters: A Class of Robust Edge Enhancers," Harold Longbotham, David Eberly, accepted for publication in IEEE SP, March, 1993.

Refereed Journal Papers in Review:

"Fixed Points of Order Statistic Filters," David Eberly, Harold Longbotham, in revision for IEEE SP, submitted Feb. 1991.

"Nonlinear Filtering of Evoked Potentials," Harold Longbotham, Randy Glickman, Daniel Shelton, Wayne Wooten, submitted to the JOSA A special issue on Noninvasive Assessment of the Visual System, Aug. 1992.

"Application of a Neural Network for detection of Proximal Surface Dental Carries," Dove, B., Gay, L., McDavid, D., and Longbotham, H.G., submitted to Oral Surgery, Oral Medicine, Oral Pathology, March 1992.

Panel Discussions:

Phonocardiography Research Conference, Cardiology Service, Brooke Army Medical, March 4-5, 1992.

Artificial Neural Network Panel, SouthWest Research Institute, Summer 1990.

Refereed Conference Papers:

"Nonlinear Operators, Linear Over the PICO Signals", Harold Longbotham, David Eberly, Walter Richardson, and Dmitry Gokhman, accepted to be presented at and published in the proceedings of the Mathematics of Signal Processing Conference, Warwick, England, Dec. 15-17, 1992.

"Robust Norms for Robust Filters," Harold Longbotham, presented at and published in the proceedings of the CCECE'92, IEEE Society meeting of Canada, Sept., 1992

"Nonlinear System Theory for PICO Signals", Harold Longbotham, presented at and published in the proceedings of the CCECE'92, IEEE Society meeting of Canada, Sept., 1992

"Comparison of Four Methods of Image Decomposition," Tom Arnow, Joseph Havlicek, Dmitry Gokhman, Harold Longbotham, presented at and published in the proceedings of the CCECE'92, IEEE Society meeting of Canada, Sept., 1992

"Design of Optimal Linear Operators for the Haar Basis," Harold Longbotham, Walter Richardson, Dmitry Gokhman, presented at and published in the proceedings of the Wavelets and Applications Conference, Toulouse, France, June 1992

"Multiscale Wavelet Analysis of Mammograms," Walter Richardson, Harold Longbotham, Dmitry Gokhman, presented at and published in the proceedings of the Wavelets and Applications Conference, Toulouse, France, June 1992

"Robust Time Domain Frequency Analysis," Daniel Shelton, Harold Longbotham, presented at and published in the proceedings of the SPIE/IS&T Conference on Image Processing (Nonlinear Signal Processing III), San Jose, California, 1992

"A Class of Robust Nonlinear Filters for Signal Decomposition Utilizing the Haar Basis," Harold Longbotham, presented at and published in the proceedings of the IEEE ASSP Conference, San Francisco, California, March, 1992

"Fixed Points and Convergence Properties of Some Ordering Based Filters," Harold Longbotham, David Eberly, presented at and published in the proceedings of the SPIE/IS&T Conference on Image Processing (Nonlinear Signal Processing III), San Jose, California, 1992

" An Application of WMMR filters to Detection and Sizing of Tumors in Mammograms," Amy Glatt, Harold Longbotham, Thomas Arnow, Daniel Shelton, Peter Ravdin, presented at and published in the proceedings of the SPIE Conference on Medical Imaging, San Jose, California, Feb. 1992.

"Comparison of Sensor Configuration for Presentation of Data to an ANN in 2-D Pattern Recognition," Thomas L. Arnow and Harold Longbotham, presented at and published in the proceedings of the ANNIE '91, the International Conference on Artificial Neural Networks in Engineering, St. Louis, Missouri, Nov., 1991