

AD-A145 755

COMPUTER EQUIPMENT FOR RESEARCH IN STATISTICS(U)
PITTSBURGH UNIV PA CENTER FOR MULTIVARIATE ANALYSIS
P R KRISHNAIAH AUG 84 AFOSR-TR-84-0822 AFOSR-83-0226

1/1

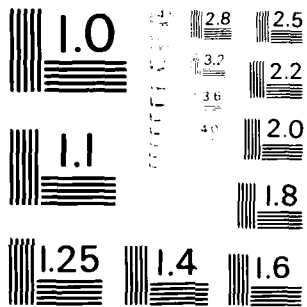
UNCLASSIFIED

F/G 9/2

NL



END
DATE
FILMED
10 84
DTIC



NATIONAL BUREAU OF STANDARDS-1963-A
 NATIONAL BUREAU OF STANDARDS-1963-A

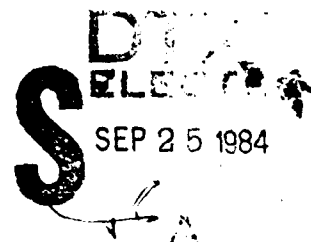
AD-A145 755

DTIC FILE COPY

COMPUTER EQUIPMENT FOR RESEARCH IN STATISTICS

Final Scientific Report
Submitted to the
Air Force Office of Scientific Research
by the
Center for Multivariate Analysis
University of Pittsburgh

Grant No. AFOSR 83-0226



84 09 17 044

The equipment items that are purchased using the funds of the Grant AFOSR 83-0226 and the cost of the items are given below:

<u>Item</u>	<u>Cost</u>
CPU System	\$112,375.00
Computer Shield II	2,350.00
FORTRAN License	2,350.00
PASCAL License	2,250.00
C License	2,250.00
Spinwriter Printer/Terminal & Accessories	4,650.00
3 Send/Receive Hardcopy Terminals *	3,292.50
4 Alphanumeric Video Graphics Terminals w/Country Kits	4,390.00
Regis Graphics Library	1,750.00
Regis Graphics VI Update	425.00
Graphics Plotter	821.25
15 AJ1259 Modems	7,291.80
(Partial) Insurance & Shipping	528.45
TOTAL	144,724.00

The equipment that is acquired under the grant will be used in support of the research in the areas of mathematical statistics and applied probability, computational statistics and modern data analysis, statistical signal processing, reliability and quality assurance, stochastic processes and time series analysis, simulation methodology, statistical methods in target tracking, and robust statistical methods. Brief descriptions of some specific areas of research are as follows:

* There is a delay by the vendor in the delivery of one of the terminals, although it was ordered by June 14, 1984. The above item is expected to arrive in September, 1984. All other equipment items are in operation.

1. Multivariate Analysis and Its Applications

The research involves development of new methodology in the areas of classification, cluster analysis, multivariate regression analysis, principal component analysis, canonical correlation analysis, factor analysis and some other areas of multivariate analysis. The work would involve computation of many multivariate distributions, extensive simulations to study the properties of various procedures for estimation and testing.

2. Techniques of Data Analysis in Flight Control Problems

In the area of research on flight control, several statistical problems arise. For example, it is of interest to find out as to which keyboards are better in the cockpit of the aircraft from the point of view of optimizing the performance of the pilots. Simultaneous test procedures are useful in solving the above problems. It is planned to investigate relative merits of various simultaneous test procedures. The proposed research would involve simulations and computations of some distributions.

3. Pattern Recognition

It is planned to do research in developing methodology useful in the area of pattern recognition and develop software to implement some of the methodology. It is also planned to compare the advantages and disadvantages of certain methods of pattern recognition. The

methodology of pattern recognition will be applied to such areas like fault diagnosis, medical diagnosis, signal detection, speech recognition, image processing, etc. The above work involves extensive use of the computer equipment.

4. Reliability and Quality Assurance

Research in the area of reliability and quality assurance involves development of reliability algorithms, optimum component testing procedures for system reliability demonstration, propagation of uncertainties, simulation methodology, optimization techniques, development of multivariate distributions and techniques useful for studying the reliability of multicomponent and multistate systems. The above work involves use of the computer equipment since it involves simulations, computations of various distributions and development of software for implementation of some methodology.

Work in the area of multivariate analysis and its applications using the computer equipment obtained under the grant is in progress.



UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			
4. PERFORMING ORGANIZATION REPORT NUMBER(S)		5. MONITORING ORGANIZATION REPORT NUMBER(S) AFOSR-TR 84-0822	
6a. NAME OF PERFORMING ORGANIZATION University of Pittsburgh	6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION Air Force Office of Scientific Research	
6c. ADDRESS (City, State and ZIP Code) Center for Multivariate Analysis, Ninth Floor, Schenley Hall, Pittsburgh PA 15260		7b. ADDRESS (City, State and ZIP Code) Directorate of Mathematical & Information Sciences, Bolling AFB DC 20332	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION AFOSR	8b. OFFICE SYMBOL (If applicable) NM	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER AFOSR-83-0226	
8c. ADDRESS (City, State and ZIP Code) Bolling AFB DC 20332		10. SOURCE OF FUNDING NOS.	
		PROGRAM ELEMENT NO. 61102F	PROJECT NO. 2304
		TASK NO. A5	WORK UNIT NO.

COMPUTER EQUIPMENT FOR RESEARCH IN STATISTICS

12. PERSONAL AUTHOR(S) P.R. Krishnaiah			
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM 15/6/83 TO 14/6/84	14. DATE OF REPORT (Yr., Mo., Day) AUG 84	15. PAGE COUNT 3
16. SUPPLEMENTARY NOTATION			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This grant purchased computer equipment to support basic research in multivariate analysis at the University of Pittsburgh. Some of the research areas to be supported by this equipment include the development of new methodology in multivariate analysis, techniques of data analysis in flight control problems, pattern recognition, and reliability and quality assurance.			
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT ☐ DTIC USERS ☐		21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL CPT Brian W. Woodruff		22b. TELEPHONE NUMBER (Include Area Code) (202) 767-5027	22c. OFFICE SYMBOL NM

DD F

84 09 17 044

73 IS OBSOLETE

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE

DATE
ILME