Curriculum Vitae

Professor Mourad Barkat, *Fellow IEEE*

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Department of Computer Engineering
King Saud University
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Education:

Ph.D. - Electrical Engineering
Syracuse University (April 1987)
Syracuse, New York 13244-1240

Master of Science – Electrical Engineering
Syracuse University (May 1983)
Syracuse, New York 13244-1240

Bachelor of Science – Electrical Engineering
Syracuse University (May 1981)
Syracuse, New York 13244-1240

Work History:

- King Saud University, (September 2009-)
- American University of Sharjah, Electrical Engineering, Professor (August 2005-June 2009)
- Rector (Chancellor) of Badji Mokhtar-Annaba University, Algeria (August 2000–April 2002) "*The university had 7 Faculties, 35 000 students, and 1 500 Faculty-members*".
- University of Constantine, Electrical Engineering, Professor (1997–2004), Associate Professor (1991-1997)
- Director of the Signal Processing Laboratory, University of Constantine, Algeria (2000–2004)
- Ecole Militaire Polytechnique, Electrical Engineering, Adjunct Professor (1996–2004)
- State University of New York (SUNY) at Stony Brook, Assistant Professor (1987–1991)
- Syracuse University, Teaching Assistant (1981–1987)

Academic Achievement and Professional Society Activities and Awards:

♦ *Fellow IEEE* (January 2008), For Contribution to Adaptive Thresholding Radar Signal Detection
♦Dean's List for every semester during Undergraduate Studies
♦Member of Tau Beta Pi, National Electrical Engineering Society (USA)

♦Member of Eta Kappa Nu, National Electrical Engineering Society (USA)
♦ Bachelor of Science with High Honors: Magna Cum Laude
♦ University Teaching Merit Award for Teaching and Curriculum Development at SUNY, Stony Brook, 1987-1988 (USA)
♦ University Teaching Merit Award for Teaching and Curriculum Development at SUNY, Stony Brook, 1989-1990 (USA)
♦ *Designated* Member, by the President of Algeria, of the National Commission to Study and Reform the Educational System
♦ *Elected* President of the Technology National Commission "Commission intersectorielle" for the relations between different universities, research institution, and industry (2000-2004)
♦ Listed in *Who's Who in the World*, *Twenty-fourth Edition 2007*, in *2000 Outstanding Intellectuals of the Century*, 2007, in *International Educator of the Year*, 2007, and in *Who's Who in Science and Engineering*, 2008
♦ Best Senior Design Project in the United Arab Emirates, "Enhancing Wireless Communication Using Adaptive Thresholding CFAR", Students: Joseph El Ghoul and Kazim R. Nanji, Advisors: M. Barkat and M. El-Tarhuni May 2007
♦First Prize, Sharjah Islamic Bank Students Research Award, "Experimental Implementation of Adaptive CFAR Multipath Detection for Wideband Communication Systems", Students: Joseph El Ghoul and Kazim R. Nanji, Advisors: M. Barkat and M. El-Tarhuni, October 2007
♦ Reviewer for Many IEEE Journals and Conferences
♦ Reviewer for IET proceedings on Radar, Sonar and Navigation
♦ Reviewer for Signal Processing (Elsevier)
♦ Reviewer for IRSN Signal Processing (Hindawi)
♦ Reviewer for Progress in Electromagnetics - PIER
♦ Reviewer for many other on-going International Conferences

Other Awards:

NSF Research Award – SUNY at Stony Brook, USA

1. « On Adaptive Distributed Detection and Data Fusion », National Science Foundation (NSF), Research Award N° ECS-8907176, June 1989 - May 1991, (USA)

University of Constantine, Algeria

2. « Détection Adaptative avec Capteurs Multiples et Fusion des Données », Research Award, Ministry of Higher Education, April 1992 - December 1994 (Algeria)

3. « Localisation et Séparation des Sources à l'aide d'un Vecteur de Capteurs », Research Award, Ministry of Higher Education, January 1995 - December 1997 (Algeria)

4. « Systèmes de Détection Distribuée avec Corrélation », Research Award, Ministry of Higher Education, January 1998 - December 2000 (Algeria)

5. « Systèmes de Détection Décentralisée avec Radars à Haute résolution», Research Award, Ministry of Higher Education, January 2001 - December 2003 (Algeria)

6. «Application de STAP aux radars aéroportés et à la Communication Mobile», Research Award, Ministry of Higher Education, January 2004 - December 2006 (Algeria)

National Research Projects « PNR »
Projet de Recherche Scientifique et de Développement Technologique

7. « Détection Distribuée avec Radars à Haute Résolution », Technologies Avancées, Technologies Spatiales et Applications, September 1999 - December 2003.

8. Traitement de Reseaux d'Antenne pour Radars/Sonars et communications », Technologies Avancées, Technologies Spatiale et Applications, September 1999-December 2003.

American University of Sharjah, UAE

9. "On Adaptive CFAR Signal Detection for Wideband Communication Systems", University Seed-Grant, January 2006-September 2006 (with M. El-Tarhuni)

10. "Adaptive CFAR Detection in High Resolution Radar, Faculty Research Grant, April 2006-September 2007 (with N. Qaddoumi)

11. "Adaptive Thresholding CFAR Signal Detection for Wideband Communications Using Antenna Diversity", Faculty Research Grant, April 2007-December 2008

12. "Student Satellite Station", A multidisciplinary project Funded Emirates Foundation, (with N. Guessoum, A. Hamza, and T. Majid from CAS, and L. Al-Basha from CEN)

King Saud University

13. "Implementation of Adaptive Threshoding CFAR Signal Detection for Wideband Communications, Submitted to KACST in December 2010 for Funding, Budget Requested is 1 940 130 SR (with Dr. S. Alshebeili)

14. Adaptive Thresholding CFAR Signal Detection for wide Band Communications using Smart Antennas/Antenna Diversity, To be submitted Before next week, Deadline of June 1, 2011, Expected budget requested is about 2 000 000 SR.

Graduate Theses Supervised:

Doctoral Theses

1. Stelios D. Himonas, « On Adaptive and Distributed CFAR Detection with Data Fusion », **Ph.D.**, SUNY at Stony Brook, USA, September 1989

2. Shen D. Lin, « On Signal Reception and Direction-of-Arrival Estimation by Sensor Array », **Ph.D.,** SUNY at Stony Brook, USA, May 1990.

3. Yung D. Huang, « On Signal Reception and Direction of Arrival Estimation by Sensor Array », **Ph.D.**, SUNY at Stony Brook, USA, June 1991.

4. Mostefa Bellounar, « Detection distribuée Optimale avec Corrélation ‘’Pulse-to-Pulse’’ et Senseurs Indépendants/Dépendants », **Doctorat d’état**, University of Constantine, Algeria, December 1998

5. Fouzi Soltani, « Détection Adaptative CFAR dans un Clutter Non Homogène Gaussien et K-Distribué avec Corrélation Partielle », **Doctorat d’état**, University of Constantine, Algeria, March 1999.

6. Mhamed Hamadouche, “Clutter map CFAR dans un clutter de Weibull”, **Doctorat d’état**, University of Constantine, Algeria, October 2000.

7. Atef Farrouki, “ Applications de Censures Automatiques aux Détecteurs Adaptatifs CFAR Basés sue les Statistiques d’Ordre, **Doctorat d’état**, University of Constantine, Algeria, June 2005

8. Toufik Laroussi, « Applications de la Détection Adaptative CFAR aux Cibles Chi-deux et Partiellement Corrélées » **Doctorat d’état**, University of Constantine, Algeria, December 2005

9. Chahira Serief, « Extraction Automatique de points d’intérêt à Base de la Transformée en Contourlets Non Sous-Échantillonnée pour le Recalage des Images» **Doctorat d’état**, University of Constantine, Algeria, July 2009

Master Theses

10. Helal A. Meziani, « Adaptive Generalized GO-CFAR and SO-CFAR Detectors in Nonhomogeneous Clutter », University of Constantine, Algeria, May 1994.

11. Mohamed A. Atia, « Localization de Sources en Utilisant la Technique *Matrix Pencil* », University of Sétif, Algeria, June 1995

12. Mabrouk Oumaamar, « Détection et Localisation de Sources Cohérentes », University of Sétif, Algeria, June 1995.

13. Samira Dib, « Détection Adaptative pour Deux Cibles Corrélées dans un Système Radar", University of Constantine, December 1995

14. Djamil Benkahoul, « Application des Techniques E.A.M. à l'Estimation Spectrale des Signaux Sinusoïdaux », University of Constantine, Algeria, June 1996.

15. Kamel Aissous, « Estimation par la Technique *Frequency-Hopped* Avec un Réseau de Capteurs pour Systèmes Actifs », University of Constantine, Algeria, June 1996.

16. Nacer Hamdi-Cherif, « Nouvelle Méthode pour l’Estimation du Nombre de Sources par la Technique *Frequency-Hopped Signalling* », University of Constantine, Algeria, January 1997

17. Karima Aliouche, « Localisation de Sources en Appliquant l'Opérateur *Forward/Backward Moving Window* à la Technique *Matrix Pencil* », University of Constantine, Algeria, March 1997

18. Abdelkrim Cheriet, « Détecteurs de Cibles à Taux de Fausse Alarme Constant pour un Radar Multicanaux », University of Science and Technology, Beb Ezzouar, Algiers, Algeria, October 1998.

19. Amel Bouchemha, « Analyse Multirésolutionnelle par Ondelettes Bidimensionnelles Non Séparables et Orientées », University of Constantine, Algeria, March 1999

20. Hichem Semira, « Analyse des Performances de Root-MUSIC en Présence de Perturbations des Espacements entre les Senseurs », University of Constantine, Algeria, July 1999

21. Messaoud Bengherabi, « Two Dimensional Forward/Backward Spatial Smoothing for Estimating Angle of Arrivals of Coherent Sources », Ecole Militaire Polytechnique, Algiers, Algeria, July 1999

22. Kamel Berbra, « Analyse du CMLD CFAR dans un Clutter de Mer K-distribué avec une Texture Indépendante et Complètement Corrélée », Ecole Militaire Polytechnique, Algiers, Algeria, October 1999

23. Amar Mazache, « Analyse du Détecteur CMAP-CFAR dans un Clutter K-Distribué », University of Constantine, Algeria, March 2000

24. Zoubeida Messali, « Méthode Hybride à base d'Ondelette pour la détection de contour avec la règle de Fusion «AND», University of Constantine, Algeria, April 2000

25. Chahira Serief, « Association de Contours Actifs Géodésiques et d'une Approche Pyramidale Multiéchelle », April 2000, University of Constantine

26. Mostefa M.Touba, «Estimation des Paramètres Spatio-temporels dans les Communications Mobiles », University of Constantine, Algeria, June 2000

27. Arezki Yousi, « Analyse des Familles de Détecteurs OS-CFAR et CMLD dans un Clutter K-Distribué en Présence d'Interférence », Ecole Militaire Polytechniques, Algiers, Algeria, July 2000.

28. Hocine Belkacemi, « Performance Analysis of the CA-CFAR and Os-CFAR detectors in K-Distributed Clutter and Multiple Targets Situations", Ecole Militaire Polytechnique, Algiers, Algeria, July 2000.

29. Farida hamioud, « Effet de la Modélisation du Clutter sur la Régulation de la Fausse Alarme », University of Constantine, Algeria, April 2001.

30. Mohamed A. Habib, « Détection CA_CFAR et CMLD_CFAR de Cibles radar dans un Clutter 'Non Centered Chi-2 Gamma' en Présence de Bruit Thermique et d'Interférence », Ecole Militaire Polytechnique, Algiers, Algeria, June 2001.

31. Mouna Chetibi, « Estimation de Nombre de Trajets dans les Communications Mobiles Utilisant MDL et OSMDL », University of Constantine, Algeria, Novembre 2001.

32. Latifa Hacini, « Application du Changement de PRF au STAP à Rang Réduit », University of Constantine, Algeria, December 2001.

33. Mohamed R. Deramchi, « Réseaux d'Antennes Appliqués à la Communication Mobile », Ecole Militaire Polytechnique, Algeria, December 2001.

34. Amel Aissaoui, « Séparation Aveugle de Sources Utilisant des Contrastes Asymétriques », University of Constantine, Algeria, October 2002.

35. Brahim Aissa, « Analyse des Performances du STAP à Rang Réduit Appliqué aux Radars Aéroportés », Ecole Militaire Polytechnique, Algiers, Algeria, December, 2002

36. Sabra Benkrinah, « A Study of the CMLD and OS-CFAR Detectors for Single Dwell DS-Spread Spectrum Communications », Ecole Militaire Polytechnique, Algiers, Algeria, January 2005.

37. Mhamed Gribi, "A Study of the CMLD and OS-CFAR Detectors for Single Dwell DS-Spread Spectrum Communications", Ecole Militaire Polytechnique, Algiers, Algeria, January 2005.

38. Houda Krouma, "Utilisation de la Technique de diversité d'Antennes et l'Algorithme CA_CFAR pour l'Acquisition de Codes PN dans les Systèmes DS_CDMA », University of Constantine, Algeria, December 2005.

39. Reda Bekhakhcha, « Détection Adaptative pour les Systèmes de Communication DS_CDMA », University of Constantine, Algeria, July 2006.

Teaching Experience:

King Saud University

Undergraduate courses

CEN 340 – Signals and Systems
CEN 343 – Introduction to Random Processes

Graduate Courses

CEN 601 – Engineering Stochastic Processes and Their Applications

American University of Sharjah, UAE

Undergraduate courses

NGN 111 – Introduction to Statistical Analysis
ELE 321 – Signals and Systems
ELE 360 – Stochastic Processes
ELE 361 – Communication Systems
ELE 452 – Digital Communications

University of Constantine, Algeria

Undergraduate Courses

TEC 581 – Circuit Analysis
TEC 587 – Signal Processing
TEC 592 – Communication Systems for Engineers
TES 605 – Communication Systems for Engineering Technicians

Graduate Courses

Stochastic Processes
Signal Detection and Estimation
Digital Communications
Technical English

Ecole Militaire Polytechnique, Algeria

Graduate Courses

Stochastic Processes
Signal Detection and Estimation

SUNY at Stony Brook University, USA

Undergraduate Courses

ESG 271 – Circuit Analysis
ESG 348 – Radar Systems
ESE 440/441 - Supervision of projects
ESE 343 – Communication Laboratory

Graduate Courses

ESE 531 - Detection, Estimation and Modulation Theory
ESE 532 – Digital Communications

Syracuse University, USA

Undergraduate Courses

ECE 231 - Active Resistive Networks
ECE 232 – Dynamic Networks
ECE 291 – Electrical Lab I
ECE 305 – Digital Signal processing
ECE 331 - Microelectronics
ECE 394 – Electrical Lab for Electrical Engineers
ECE 452 – Communication Systems

Graduate courses

ECE 606 - Stochastic Processes
ECE 651 - Principles of Communication Systems
♦ECE 606, was taught at *both* Syracuse University, and at IBM, the Mid-Hudson Valley Center at Poughkeepsie, New York

Summary of Teaching Evaluations:

Ranked among top three professors in a survey conducted by Eta Kappa Nu, National Electrical Honor Society, Stony Brook Chapter. The survey was published in their newsletter the DATABUS, volume 2, November 1989. This is the article as it was published.

Student evaluating professors

Recently, Eta Kappa Nu conducted a survey among the seniors in the ESE 440 class. The goal of the survey was to identify those professors in E.E. department who were most appreciated by students during their academic years in Stony Brook. Four questions were asked:

1. In your opinion, which professor in the E.E. department has the best teaching ability?
2. Who is most concerned about the student's performance in class?
3. Which professor did you learn most from?
4. Which professor makes his lectures most interesting?

For each question, students were asked to rank by order of preference three professors of their choice. Forty-four survey sheets were filled and these are the results obtained.

For the first question, students ranked Professor Chen who has the best teaching abilities. Professor Chen teaches ESE 305 and ESE 315. In the second position was professor Short who teaches ESE 380 and ESE 381. Professor Barkat who teaches ESG 271 was ranked third. A thing to be noticed is that those three professors ranked way above the others.

For the second question, Professor Chen was again in the first position followed by professor Barkat and professor Short. However, the ranking for this question was very close since Prof. Chen was ahead only by 1 vote over professor Barkat and 4 votes over Prof. Short. In other words, there was no clear winner like in the first question. But one thing is certain; students consider those 3 professors as those who are most concerned about students' performance in class.

For the third question, students ranked again Professor Chen in the first position followed by Prof. Short, followed by Prof. Barkat. Again, these three professors ranked well about the others.

For the 4th question, Prof. Short, by a relatively large margin, was found to have the most interesting lectures. Ha was followed by Prof. Barkat and Prof. Chen. Very close to them at 1 vote difference from Prof. Sussman-fort. Those were the four professors who got the most votes for this question.

So these are the results obtained from this survey. Of course, this survey could have been more significant if more students participated. But from the opinion of the 44 students, who participated in the survey, it appears clearly that 3 professors have really distinguished themselves from the others: professors Chen, Short and Barkat, with a special mention to Professor Chen. For these three professors, congratulations and keep up the good work.

- ***Another article was published by Eta Kappa Nu, Volume 2, fall 1990. This is the article as it appeared.***

A PROFILE OF ACCOMPLISHMENT AND INVOLVEMENT: PROF. MOURAD BARKAT

Very well known to all engineering students is Prof. Barkat. Last year, he was chosen as one of the most popular professors in teaching in a survey among electrical engineering seniors in this newsletter.

Born in Algeria, he came to the United States after finishing high school in his native country. He got his bachelor, master and Ph. D. degrees in electrical engineering at Syracuse University. After a summer in postdoctoral position at Syracuse University, he came to Stony Brook. Ever since, his teaching methods have made him famous and popular among the students; as a consequence, he has received the University Merit Teaching Award for Teaching and Curriculum Development twice already (1987-1988 and 1989-1990).

He started teaching ESG 271 in fall, 1987, and in the past year he has added two more undergraduate courses to the electrical engineering curriculum; ESE 348 Radar Systems (Spring, 1990) and ESE 343 a laboratory course in communications (Fall, 1990). He also teaches graduate courses in Detection and Estimation and Digital Communications. Besides teaching he has been a productive researcher with papers published (approximately 30) in four different journals and conference proceedings.

In communication and signal processing, his main area is detection/estimation, and adaptive detection with multiple sensors and data fusion. His research has applications in radar and array in which he is currently supervising two Ph.D. students. He is also doing research in queuing/routing theory with distributed networks, where he is supervising another Ph.D. student.

His teaching method emphasizes writing all the information on the blackboard and giving a thorough explanation. He also presents the material in orderly fashion and gives good class notes, making it easier for students to grasp the basic concepts and theories covered in the course. One thing you should know is that he takes homework seriously. He advises if you do your homework on time and you discuss them with your classmates (not copy them), it helps you in the learning process. He thinks that this not only will help you in his classes, but also in future courses.

By personal experience, he advises you to get involved in extracurricular activities. He was an active member of several clubs and organizations while studying in Syracuse, and currently he is the principal advisor of Eta Kappa Nu and one of the advisors of Tau Beta Pi. He thinks that not only good grades will take you where you want to be but also good relations with others; and participating in different activities is very helpful in developing interpersonal skills and leadership qualities.

By Anselmo Adams

SUNY A Stony Brook 1987- 88

Professor Prepared

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	50	50	0	0	0	0	0
ESE 531	85.7	9.5	4.7	0	0	0	0
ESE 532	75	0	25	0	0	0	0

Professor Knowledge

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	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	50	50	0	0	0	0	0
ESE 531	76.2	14.3	4.8	0	0	0	0
ESE 532	25	50	25	0	0	0	0

Professor Presentation Clear

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	50	25	25	0	0	0	0
ESE 531	80	20	0	0	0	0	0
ESE 532	75	0	25	0	0	0	0

High Performance

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	50	25	0	25	0	0	0
ESE 531	71.4	23.8	0	4.8	0	0	0
ESE 532	25	50	0	25	0	0	0

Professor Deserves Award

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	50	0	25	25	0	0	0
ESE 531	57.1	38.1	0	4.8	0	0	0
ESE 532	25	50	0	25	0	0	0

Note: Scoring Coded on a Continuum of “1” through “7”
"1" = Strongly Agree "7" = Strongly Disagree

- The entries in the tables are the percentages

SUNY A Stony Brook 1988 - 89

Professor Prepared

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	43.5	37	16	0	0	0	0
ESE 531	81.25	18.75	0	0	0	0	0
ESE 532	62.5	37.5	0	0	0	0	0

Professor Knowledge

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	67	22	6.6	2.2	0	1.1	1.1
ESE 531	76.2	87.5	12.5	0	0	0	0
ESE 532	50	50	0	0	0	0	0

Professor Presentation Clear

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	46.7	25	16.3	4.35	4.35	3.3	0
ESE 531	68.75	25	6.25	0	0	0	0
ESE 532	50	50	0	0	0	0	0

High Performance

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	52.2	29.35	12	2.2	3.3	0	1
ESE 531	81.25	18.75	0	0	0	0	0
ESE 532	62.5	37.5	0	0	0	0	0

Professor Deserves Award

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	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	52.3	26.1	10.2	5.7	3.4	1.1	1.1
ESE 531	71.4	21.4	7.1	0	0	0	0
ESE 532	33.3	50	16.7	0	0	0	0

Note: Scoring Coded on a Continuum of “1” through “7”
"1" = Strongly Agree "7" = Strongly Disagree

- The entries in the tables are the percentages.

SUNY A Stony Brook 1989 – 90

Professor Prepared

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	70.1	21.6	5	2.5	0	0.8	0
ESE 348	76.9	23.1	0	0	0	0	0
ESE 532	47.1	47.1	5.9	0	0	0	0

Professor Knowledge

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	69.8	21.2	2.5	1.7	0	0	0
ESE 348	84.6	15.4	0	0	0	0	0
ESE 532	47.1	52.9	0	0	0	0	0

Professor Presentation Clear

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	26.8	41.3	15.7	9.3	2.7	0.8	1.8
ESE 348	53.9	30.8	15.4	0	0	0	0
ESE 532	64.7	35.3	0	0	0	0	0

Haute Performance

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	45.9	24.8	15.7	2.6	6.7	3.3	0.8
ESE 348	76.9	15.4	0	0	0	0	0
ESE 532	46.7	53.3	0	0	0	0	0

Learned A Lot

	"1"	"2"	"3"	"4"	"5"	"6"	"7"
ESG 271	49.2	15.9	17.5	7.1	2.7	3.3	3.4
ESE 348	69.2	30.8	0	0	0	0	0
ESE 532	64.7	29.4	5.9	0	0	0	0

Note: Scoring Coded on a Continuum of "1" through "7"
"1" = Strongly Agree "7" = Strongly Disagree

- The entries in the tables are the percentages.

SYRACUSE UNIVERSITY

	Knowledge of Subject Matter					Ability to Teach				
	E	VG	G	F	P	E	VG	G	F	P
ECE 231	38	37	6	1	0	21	38	19	3	0
ECE 232	23	11	1	0	0	19	8	5	1	0
ECE 292	11	19	1	1	0	17	11	2	2	0
ECE 394	16	12	3	0	0	9	15	7	0	0
ECE 305	27	26	11	2	0	14	29	18	4	1
ECE 452	18	20	4	0	0	11	13	14	1	3
ECE 606	25	40	10	0	0	21	27	23	5	0
ECE 651	7	9	12	4	2	11	6	8	5	4

Overall Rating

	E	VG	G	F	P
ECE 231	25	39	14	2	0
ECE 232	15	13	4	1	0
ECE 292	15	12	3	1	0
ECE 394	15	13	3	0	0
ECE 305	19	29	12	4	0
ECE 452	8	20	9	4	1
ECE 606	18	36	18	1	0
ECE 651	7	9	9	5	3

- The entries in the tables are the number of students.

E = Excellent
VG = Very Good
G = Good
F = Fair
P = Poor

Publications:

Books

[1] M. Barkat, *Signal Detection and Estimation*, Artech House, Boston, MA, USA, 1991

[2] M. Barkat, *Signal Detection and Estimation*, Second Edition, Artech House, Boston, MA, USA, September 2005. **ISBN: 1580530702**

CD-ROM Included! Contains detailed solutions to the problems presented at the end of each chapter

Summary: This newly revised edition provides you with a comprehensive and current understanding of signal detection and estimation. Featuring a wealth of new and expanded material, the second edition introduces the concepts of adaptive CFAR detection and distributed CA-CFAR detection. Containing numerous solved examples and packed with over 2,100 equations and 183 problems, this book covers a wide range of critical topics and helps you apply the material to projects in the field involving signal processing, radar, and communications.

[3] M. Barkat, *Signal Detection and Estimation*, Third Edition, Artech House, Boston, MA, USA, Under Preparation (early stages)

[4] M. Barkat, *Probability, Random variables and Stochastic Processes for Undergraduate Engineers*, Textbook for Juniors and Seniors Level Students, Under Preparation

Book Chapter

[5] T. Laroussi and M. Barkat, *An Efficient Closed Form Approach to the Evaluation of the Probability of False Alarm of the ML-CFAR Detector in a Pulse-to-Pulse Correlated Clutter*, Chapter 3, Springer:Norwell, Massachusetts, USA, 2007, to appear.

Report

[6] M. Barkat and P.K. Varshney, « On Adaptive Cell-Averaging CFAR Radar Signal Detection », *Technical Report, RADC-TR-87-160*, Rome Air Development Center, Air Force Systems Command, Griffis Air Force Base, Syracuse, N.Y. 13441.

Journal Papers

[7] ♦M. Barkat and P.K. Varshney, « Decentralized CFAR Signal Detection », *IEEE Transactions on Aerospace and Electronic Systems*, Vol. AES-25, N°2, pp. 141-149, March 89.

- ♦ First contribution on the concept of adaptive thresholding CFAR detection with multiple sensors and data fusion in the open literature

[8] ♦ M. Barkat, S.D. Himonas and P.K.Varshney, « CFAR Detection for Multiple Target Situations », *IEE Proceedings, Part F*, Vol. 136, N°5, pp. 193-209, October 89.

- ♦ These are 3 different journal papers accepted by the different referees but combined as One Big Paper of 18 journal pages at the request of the editor to make a major contribution in the subject area

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