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Sami M. Alhumaidi (Ph.D.)

Objective

To participate in making Saudi Arabia among the leading technically advanced countries in the world by providing excellent education, world-class applied research, and state-of-art technology transfer.

Summary

- Managing Director, Prince Sultan Advanced Tech. Research Institute, College of Engineering, King Saud University, Riyadh
- Executive Director overseeing four different research institutes and centers at King Abdulaziz City for Science and Technology, and the Director of the National Electronics, Communications, and Photonics research program.
- Managing a number of strategic technology transfer project from more than three different countries.
- A Consultant to a number of organizations within the ministry of defense and aviation.
- A Specialist in Radio Frequency, Radar, EW, and Antenna system design and test.
- Good strategic planning and leadership skills.
- Familiar with public and private sector dynamics, as well as academic and research environment.

Professional Experience

2011-Present *PSATRI* *Riyadh, KSA*

Managing Director for Prince Sultan Advanced Tech. Research Institute

Responsible for executive administration of the Institute. This includes:

- Strategic planning
- Administrative organization
- Financial management
- Provision of financial resources.
- Approve executive plans for labs and centers
- Supervision of production and evaluations of lab directors
- Manage relationship with strategic clients of the Institute

2010—2011 *KACST* *Riyadh, KSA*

Executive Director for Information and Electronics Sector

Supervising the general strategy and direction for the Information Technology, Broadband Communications, Robotics, and Electronics and Photonics research centers and institutes. Responsible for the development of the five-year strategic plan for the Information and Electronic Research sector within KACST.

2007—2010 *KACST* *Riyadh, KSA*

Director, National Electronics, Communications, and Photonics Research Program

Was responsible for starting this new applied research program within KACST. It is now the largest and most active institute within KACST. Conducting over 30 applied research project, it focused on strategic and nationally important topics. The first institute to establish a fully functional project management office, configuration management control, and system engineering practice. It is now involved in the technology transfer of many national project in conjunction with other governmental and nongovernmental organizations from over six different countries. The institute now has over 200 employees and houses a number of nationally recognized experts. The institute operates a number of national labs and centers including the space geodesy center, the laser observatory, the antenna far-field testing lab, and the advanced PCB assembly and test facilities.

2004—2007 *KACST* *Riyadh, KSA*

Manager, EW and Radar Center

Was responsible to manage a group of engineers to establish know-how and expertise in the fields of EW and radar, within the Space Research Institute. Conducted a number of EW training events and participated in the coordination of the second Saudi EW symposium and the first EW

coordination workshop. Established an EW AOC chapter in the kingdom of Saudi Arabia.

1999—2004 *KACST* *Riyadh, KSA*

Systems Engineer, Satellite Development Center

Was responsible for overseeing the technical aspects of the development and production of the Saudi Satellites. Participated in the integration with launch vehicles and satellite tracking and management. I was the lead design and test engineer for the satellite microwave sub systems.

1998—1999 *Saudi Aramco* *Dhahran, KSA*

Consulting Engineer, Consulting Services Department

Was responsible for developing engineering standards and procedures for adoption by communications and network engineers within Saudi Aramco and its contractors. Acted as an unbiased technical auditor and investigator for Aramco inspection department.

1998—1998 *SCM, RSAF* *Riyadh, KSA*

Program Manager, Research and Analysis directorate

Was in charge of the subject matter experts within the research and analysis directorate at the RSAF. Attended program review meetings and gave technical judgment to RSAF leaders.

1997—1997 *University of Central Florida* *Orlando, FL, USA*

Research Scholar, Central Florida Remote Sensing Lab

Responsible for managing a research project for developing a detailed simulation of a space borne scatterometer for E-Systems/Raytheon of St. Petersburg, FL. Successfully managed a group of graduate students and completed the project ahead of schedule. Taught satellite communications classes at Cape Canaveral Kennedy Space Center.

1990—1992 *Saudi Aramco* *Dhahran, KSA*

Communications Engineer, Communications Engineering Department

Was responsible for performing engineering designs for upgrading transmission links and developing engineering studies for proposed transmission and data communications projects. Participated in the studies of RF interference to V/UHF networks. Assisted in the design and installation of a fiber optic network linking the office buildings in the Dhahran core area.

1989—1990 *Advanced Electronics Company* *Riyadh, KSA*

Communications Engineer, Projects Department

Participated in the design and project proposal development of a combat radio network for the signal corp of the Saudi Army. Attended a hands-on training program at Racal headquarters in Reading, UK, on the Jaguar V frequency-hopped radio.

Projects Managed

2004-2006 Managed the development of an advanced target and countermeasure simulator. This simulator covered the threat radar frequency bands and was instrumental in testing operational radars.

2005-2007 Managed the development of a communications counter measure system equipped with advanced tracking filters and acquisition receivers.

2006-2009 Managed the development of an advanced radar signal processor system. The system was designed with the latest technology in FPGAs and high-speed processors. The system included a state-of-art data processing and archiving capabilities. Advanced radar detection and tracking algorithms are being researched and developed using this system.

2007-2009 Managed the development of a data security and networking device. This device was used to communicate securely among team members.

2008-2010 Managed the development of an LPI-based surveillance radar system for the detection and tracking of ground and sea targets. The radar utilizes the latest technology in hardware and software and employs advanced classification and identification algorithms.

Consulting

2006-Present The primary consultant to the Royal Saudi Air Force EW Directorate. Currently handling a number of consulting tasks for several projects. (details can be provided if cleared by client)

2008-Present The primary consultant to the Royal Saudi Air Defense EW Directorate. Currently handling a number of consulting tasks for a major project. (details can be provided if cleared by client)

2006-Present The primary consultant to the Royal Saudi Land Forces EW Directorate. Currently handling a number of consulting tasks for a major project. (details can be provided if cleared by client)

Education

1994– 1997 | *Florida Institute of Technology* | *Melbourne, FL, USA*

Ph.D. / Electrical Engineering

Concentrated on satellite communications, microwave remote sensing, and digital signal processing. Held a research assistant position with Florida Tech Remote Sensing Lab. Assisted in teaching a graduate-level satellite communications course. Conducted original research that concluded in the publication of my dissertation entitled "Development of a Geophysical Model Function for a Radar Scatterometer Using Neural Networks."

1992– 1993 | *California State University, Northridge* | *Northridge, CA, USA*

MSc. / Electrical Engineering

Concentrated on communications theory, probability and random processes, and digital signal processing. Performed research on the use of code division multiple access in personal communications systems.

1983– 1988 | *King Fahd University of Petroleum and Minerals* | *Dhahran, Saudi Arabia*

BSc. / Electrical Engineering

Focused the BSEE studies on communications theory and wireless systems. I was an active member of the EE club in the university. I was a member of the IEEE group in the department. Obtained accredited summer courses from the University of California, Berkely (1985) and the University of California, Irvine (1986).

Professional and Community Memberships

- IEEE
- AOC (President of Saudi Chapter)

Publications

1. Nashashibi,A., K. Sarabandi, F. Al-Zaid, **S. Alhumaidi**, "Characterization of volume scattering of dry sand at millimeter-wave frequencies," to appear in Proceedings of the IGARSS 2010, July 2010.
2. Al-Sahhaf, N. A., R.M. Fernandes , **S.M. Alhumaidi**, "The ArabRef project – a new geodetic network for Arabia", Proceedings of the XXIV FIG International Congress in Sydney, Australia, April, 2010.

3. Seddiq, Y.M., S.A. Alshebeili, **S.M. Alhumaidi**, A.M. Obied, "FPGA-Based Implementation of a CFAR Processor Using Batcher's Sort and LUT Arithmetic," Proc. Of the 4th IEEE International Design and Test Workshop, December 2009.
4. **Alhumaidi, S.M.**, "The Experience of King Abdulaziz City for Science and Technology in the Field of Encryption and Security Systems," Proc. Of the Seminar on Experiences, Opportunities and Challenges in PKI (organized by the Ministry of Communications and Information Security), October 2008.
5. **Alhumaidi, S.M.**, A.A. Al-Ghamdi, "Riyadh Satellite Laser Ranging: 12 years of Performance, "Proc. Of the First Arab Conf. on Astronomy and Geophysics (ACAG-1), October 2008.
6. **Alhumaidi, S.M.** "Video Data Transmission System: the Saudisat3 Experience, "Proc. Remote Sensing Arabia, Commission VIII, WG I/4, 2005.
7. Al-Saud, T.S., A. Alsugair, **S. Alhumaidi**, M. Almajed, "Saudisat-1E Constellation and its Applications," Proc. Remote Sensing Arabia, Commission VIII, WG I/4, 2005.
8. **Alhumaidi, S.M.**, W.L. Jones, "Novel approach to retrieving wind vectors from the NSCAT scatterometer," In Kevin L. Priddy, Paul E. Keller, and David B. Fogel, editors, Applications and Science of Computational Intelligence III, volume SPIE-4055, pages 200–207, March 2000. The International Society for Optical Engineering.
9. **Alhumaidi, S.M.**,W.L. Jones, K. Shaw,F. Syed, D. Vinod, "Conical scanning microwave scatterometer geophysical performance simulation," Proceedings of IEEE SOUTHEASTCON, pages 326-329, 1998.
10. **Alhumaidi, S.M.**, W.L. Jones, J. Park, S.M. Ferguson, "A neural network algorithm for sea ice edge classification," IEEE Transactions on Geoscience and Remote Sensing, Vol. 35, no. 4, pp. 817-826, July 1997.
11. **Alhumaidi, S.M.**, W.L. Jones, "A neural network approach to the determination of the geophysical model function of the ERS-1 C-band space borne radar scatterometer," Proceedings of the SPIE conf., volume SPIE-3077, pages 594–599, April 1997, The International Society for Optical Engineering.
12. **Alhumaidi, S.M.**, W.L. Jones, "On-line sea ice classification using NSCAT sigma-0 data," Proceedings of the Fourth International Conference on Remote Sensing for Marine and Coastal Environments, March 1997.
13. **Alhumaidi, S.M.**, W.L. Jones, "Sea-ice edge flag using NSCAT sigma-0 data," NSCAT Science Team Workshop, January, 1997.
14. **Alhumaidi, S.M.**, W.L. Jones, J. Park, S. Ferguson, M. Thursby, S.H. Yueh, "A neural network sea ice edge classifier for the NASA scatterometer," in Proc. IGARSS'96 digest, May 1996.
15. **Alhumaidi, S.M.**, L.V. Fausett, "FIR digital filter design using the Hopfield neural network," Proceedings of the ANNIE Conference, 1995.

Training

- Basic Project Management Using MS Project (21-25 Jun. 2006), by Emcanat Training Center
- Target Tracking Concepts (13-15 Nov. 2007), by Georgia Institute of Technology
- Radar Waveform Properties, Analysis, Design & Application (6-8 Nov. 2007), by Georgia Institute of Technology.
- Phased Array Antennas for Communications and Radar (5-9 May 2008), by CEI-Europe Advance Technology Education.
- VHDL Design and Synthesis (27-31 Jan 2007), by Parsec.
- Research and Development Management Training Course (21-25 Mar 2009), by SRI International
- Innovation and Entrepreneurship Training Course (2-6 May 2009), by SRI International
- H600 RF Hawk Spectrum Analyzer Training Course (29 Aug – 2 Sep 2009), by Rokn AlBara'ah Trading.
- Change Management (3-4 Jan 2009), By ERNST & YOUNG for System & Programing.
- أساسيات تركيب و تهيئة و تشغيل نظام لينكس (٥-٩ / ٢ / ٢٠٠٠) ، مدينة الملك عبدالعزيز للعلوم و التقنية.
- البرمجة بلغة C المتقدم (٢٠-٢٤ / ١ / ٢٠٠١) ، مدينة الملك عبدالعزيز للعلوم و التقنية.
- Inverse Synthetic Aperture Radar (27-28 Mar 2010), by University of Pisa.
- Synthetic Aperture Radar (20-25 Mar 2010), by University of Cape Town.
- Antenna Design and Measurement (12-22 Jul 2005), Grintek Antenna.

References

References available upon request.