Syed Muhammad Asad

Curriculum Vitae

Education

2006–2009 **Master of Science**, *King Fahd University of Petroleum & Minerals*, Dhahran, Saudi Arabia.
Major Electrical Engineering

1997–2001 **Bachelor of Science**, *Sir Syed University of Engineering & Technology*, Karachi, Pakistan.
Major Electronics Engineering

Experience

January 2016–current **Coordinator**, *Hafr Al Batin Community College, University of Hafr Al Batin*, Electrical and Electronics Technology Unit, Hafr Al Batin.
Saudi Arabia

Description I took over the responsibility as Coordinator of EEET Unit at HBCC overlooking all the academic and administrative aspects of the unit.

September 2009–current **Lecturer**, *Affiliated Colleges at Hafr Al Batin/University of Hafr Al Batin*, Department of Electrical Engineering, Hafr Al Batin.
Saudi Arabia

Description Taught courses on *Signal and Systems*, *Programmable Logic Controllers*, *Circuits II*, *Electronics II, Control Systems*, *Probability and Random Variables* and *Engineering Design*. Advised COOP students in their mandatory industrial training.

Contribution - Developed detailed lecture notes, revised/updated lab manuals, incorporating innovative tools in education in all courses taught.

- Developed detailed course handout, formulated homework assignments, quizzes and term projects for *EE 311 (Fundamentals of Engineering Design in EE)*. I was the first one to teach the course in its first offering in 151 and was able to achieve the course outcomes to a large extent.

- I have been an examiner for the Senior Design Project in various semesters (142, 151)

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- Member *Standing Committee on Planning (2012-2014)* responsible with *formulating strategic plan* and various other planning aspects for the college.

- Member *Standing Committee on Student Affairs (2014-2015).*

- Member of various adhoc committees at departmental level (*ABET, Scheduling*) and at university level (*Coop Coordinators, 7th Students Conference*).

Oct 2001–Oct 2005 **Service Support Engineer**, *Saudi International Trading & Marketing Co. Ltd.*, Jeddah, Saudi Arabia.

Description Responsible for Service Support of Leica Geosystems Surveying Equipment like Total Station and level.

Inventory control of service center.

Funded Projects

Title *Adaptive Decision Feedback Equalization for Wideband MIMO Systems Using Constrained Optimization Techniques.*

Description Sabic funded project (SB111012) undertaken to investigate receivers based on adaptive decision feedback equalization for MIMO-CDMA systems. The main aim is to develop algorithms based on constrained optimization where the main constrained proposed is the variance of multiple-access-interference. The project was successfully completed and published.

Research Interests

Adaptive filtering and its application to communication systems, statistical signal processing, blind equalization, MIMO communication systems.

Honors

Scholarship Recipient of graduate scholarship from King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia.

Technical Highlights

Simulation Matlab, Mathematica

Typography LaTeX, LyX

Analytical Adaptive Filter Design & Analysis, CDMA System Analysis, MIMO Systems

OS Windows

Desktop MS Office, Desktop essentials

Languages

English Near-native *Primary education to graduate degree obtained in English*

Urdu Native

Arabic Intermediate

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Publications

Book

[16] S. M. Asad, *Variable Step-Size Least Mean Fourth Adaptive Algorithm: Basics, Concepts and Analysis*. VDM Verlag, 2010.

Journals

[1] K. Mahmood, S. M. Asad, M. Moinuddin, and W. Imtiaz, "A robust mai constrained adaptive algorithm for decision feedback equalizer for mimo communication systems," *International Journal of Advanced Computer Science and Applications(IJACSA)*, vol. 7, pp. 596–600, 2016.

[2] ——, "Mai and noise constrained lms algorithm for mimo cdma linear equalizer," *International Journal of Advanced Computer Science and Applications(IJACSA)*, vol. 7, no. 1, pp. 702–711, 2016.

[3] K. Mahmood, S. M. Asad, M. Moinuddin, A. Zerguine, and L. Cheded, "Multiple access interference in mimo-cdma systems under rayleigh fading: Statistical characterization and applications," *EURASIP Journal on Advances in Signal Processing*, vol. 2016, no. 1, pp. 1–18, 2016.

[4] S. M. Asad, A. Zerguine, M. Moinuddin, and J. Chambers, "A robust and stable variable step-size design for the least-mean fourth algorithm using quotient form," *IEEE Transactions on Signal Processing*, 2015, (Under preparation).

[9] K. Mahmood, S. M. Asad, M. Moinuddin, and A. Zerguine, "Multiple-access interference plus noise-constrained least mean square (mnclms) algorithm for mimo- cdma systems," *Eurasip Journal on Advances in Signal Processing*, 2014, (Under preparation).

[10] ——, "Statistical analysis of multiple access interference in rayleigh fading environment for mimo-cdma systems," *Eurasip Journal on Advances in Signal Processing*, 2014, (Under review).

[13] K. Mahmood, S. Asad, and M. Moinuddin, "A comparative study of mimo-dfe receivers," *Asian Journal of Engineering, Sciences and Technology*, p. 26, 2011.

Conferences

[5] M. M. U. Faiz, A. Zerguine, S. M. Asad, and K. Mahmood, "Tracking mse performance analysis of the ϵ-nslms algorithm," in *Communications, Signal Processing, and their Applications (ICCSPA), 2015 International Conference on*, 2015, pp. 1–4. DOI: 10.1109/ICCSPA.2015.7081323.

[6] K. Mahmood, S. M. Asad, O. B. Saeed, M. Moinuddin, and A. Zerguine, "Rayleigh fading channel estimation using mmse estimator for mimo-cdma system," in *Communications, Signal Processing, and their Applications (ICCSPA), 2015 International Conference on*, 2015, pp. 1–4. DOI: 10.1109/ICCSPA.2015.7081282.

[7] U. Bin Mansoor, S. Asad, and A. Zerguine, "Stochastic gradient algorithm based on an improved higher order exponentiated error cost function," in *Signals, Systems and Computers, 2014 48th Asilomar Conference on*, 2014, pp. 900–903. DOI: 10.1109/ACSSC.2014.7094582.

[8] M. M. U. Faiz, U. B. Mansoor, S. M. Asad, and K. Mahmood, "Using faculty course assessment report for the assessment of an associate degree course in engineering technology program," in *Engineering Education (ICEED), 2014 IEEE 6th Conference on*, 2014, pp. 73–78. DOI: 10.1109/ICEED.2014.7194691.

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[11] K. Mahmood, S. Asad, M. Moinuddin, A. Zerguine, and S. Paul, "Statistical analysis of multiple access interference in rayleigh fading environment for mimo cdma systems," in *Statistical Signal Processing (SSP), 2014 IEEE Workshop on*, 2014, pp. 412–415. DOI: 10.1109/SSP.2014.6884663.

[12] S. Asad and A. Zerguine, "Convergence analysis of a modified armijo rule step-size lmf algorithm," in *Information Science, Signal Processing and their Applications (ISSPA), 2012 11th International Conference on*, IEEE, 2012, pp. 343–347.

[14] K. Mahmood, S. Asad, M. Moinuddin, and S. Paul, "Design of mai constrained decision feedback equalizer for mimo cdma system," in *Wireless Communications and Signal Processing (WCSP), 2011 International Conference on*, IEEE, 2011, pp. 1–5.

[15] S. Asad, A. Zerguine, and M. Moinuddin, "On the convergence analysis of a variable step-size lmf algorithm of the quotient form," in *Acoustics Speech and Signal Processing (ICASSP), 2010 IEEE International Conference on*, IEEE, 2010, pp. 3722–3725.

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