Ali S. Alghamdi, Ph.D.

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Stanford/Elsevier Top 2% Scientists List 2024

OBJECTIVE

To pursue a highly challenging career in the field of engineering, in which apply my knowledge, experience, and ideas to develop high professional skills. Improve efficiency in the systems to ensure protection for industry interest and emerge as an industry field professional. I always drive innovation and deliver quality, I am ideally positioned to add value to organizational operations and am ambitious about leading large projects using my strong electrical and computer engineering background.

EDUCATION

Oakland University, Rochester, MI — May 2017

- Ph.D. in Electrical and Computer Engineering.

Dissertation: "Robust Non-Coherent Demodulation Scheme for Bluetooth Voice Transmission Using Kalman Filtering"
Adviser: Mohamed A. Zohdy, Ph.D.

Lawrence Technological University, Southfield, MI — July 2012

- Master of Science in Electrical and Computer Engineering.
- Graduate Certificate in Telecommunication Engineering.

Lawrence Technological University, Southfield, MI — July 2012

- Bachelor of Science in Electrical Engineering ***(Cum Laude)***.

Lawrence Technological University, Southfield, MI — Dec 2010

- Bachelor of Science in Computer Engineering ***(Cum Laude)***.
- Undergraduate Certificate in Embedded Systems.

SUMMARY OF EXPERIENCE

Majmaah University, Al-Majmaah, Riyadh, Saudi Arabia — Mar. 2022 – Present
Associate Professor of Electrical Engineering, College of Engineering

Lawrence Technological University, Southfield, MI, USA — Jan. 2024 –May 2024
Visiting Associate Professor at Electrical and Computer Engineering Dept.

- Instructor of EEE 1001 Intro to Electrical and Computer Eng. laboratory.
- Instructor of EGE 1102 Engineering Computer Application laboratory.

Fulbright Visiting Scholar at Oakland University, Rochester, MI, USA — Aug. 2023- Jun 2024
Visiting Associate Professor at Electrical and Computer Engineering Dept.

- Conducting a Fulbright Grant Research in Renewable Energy
- Instructor of EGR 2400 Intro to Electrical and Computer Eng.

Energies by MDPI, peer-reviewed, open access journal, — May. 2022- Nov 2022
Guest Editor of Special Issue "Building Simulation Tool and Model"

Majmaah University, Al-Majmaah, Riyadh, Saudi Arabia — Mar. 2018 – Mar. 2022
Assistant Professor of Electrical Engineering, College of Engineering

Majmaah University, Al-Majmaah, Riyadh, Saudi Arabia — Aug. 2020 – May. 2021
Community Services committee coordinator College of Engineering

Majmaah University, Al-Majmaah, Riyadh, Saudi Arabia — Feb. 2019 – Aug. 2020
Member of the College of Engineering Steering Committee for NCAAA

Majmaah University, Al-Majmaah, Riyadh, Saudi Arabia Sep. 2018 – Aug. 2020
Chair of the Electrical Engineering Department

Majmaah University, Al-Majmaah, Riyadh, Saudi Arabia Sep. 2018 – Aug. 2020
Member of the College Council

Saudi Red Crescent Authority, Riyadh, Saudi Arabia July. 2017- Feb. 2018
Specialist in IT and Wireless Communication System

Lawrence Technological University, Southfield, MI, USA May. 2015 –May 2017
Adjunct Faculty of Electrical and Computer Engineering

- Instructor of Electronics Circuits design with laboratory.
- Instructor of Signal and Systems with laboratory.

Oakland University, Rochester, MI, USA Sep. 2014 –April 2017
Teaching Assistant

- Assisted undergraduate students an introductory lab for electrical and computer engineering materials.
- Assisted students during the lecture with study skills and preparing for exams.

Shanghai University of Engineering Science, Shanghai, China May. 2016 –July 2016
Adjunct Faculty of Electrical and Computer Engineering

- Instructor of Signals and Systems with laboratory.
- Instructor of Automatic Control Systems.
- Instructor of Technology of Microcomputer Chip Design.

Oakland University/ part time, Rochester, MI, USA Sep. 2014 –May 2015
Research assistant

- Prepared research on short range radio frequency connection on 2.4 GHz modulation.
- Optimized noise reduction and filtering for 2.4 - 5 GHz Bluetooth and Wi-Fi interference.
- Performed short range testing and optimization on fading channel with indoor signal diffractions.

Lawrence Technological University, Southfield, MI, USA Sep. 2011 –Dec 2011
Academic Tutor

- Tutored undergraduate students in computer programming and physics courses.
- Assisted students with study skills and preparing for exams.

Saudi Red Crescent Society, Riyadh, Saudi Arabia Mar. 2005 –Dec 2006
Service Advisor

- Supervised mechanics and developed skills through training and mentoring.
- Prioritized repair and maintenance work to be completed for ambulance fleet.
- Ensured proper safety policies and procedures were followed.

Technical and Vocational Training Center, Afif, Saudi Arabia Aug. 2002 –Mar 2005
Instructor

- Instructed and evaluated students' in automotive technology program courses and technology.
- Prepared and administered activities to assess students' competencies.
- Provided feedback and maintained student grade records.

SELECTED RESEARCH GRANTS PROJECTS

- **Optimal parameters extraction of photovoltaic cell and module models in different environmental conditions using robust and reliable stochastic methods ($ 37,725.00)**
  - Selected by the J. William Fulbright Foreign Scholarship supported by United States Department of State with the cooperation of the Institute of International Education.

- Developing an optimization algorithm capable of identifying uncertain parameters for PV models without setting additional parameters and with a high computing speed.
- Development of robust optimization techniques to determine the unknown parameters of PV cells and modules to enhance the performance and efficiency of the solar PV systems in Kingdom of Saudi Arabia.
- Using the new objective function to increase the accuracy in identifying photovoltaic parameters.
- A comparison of the proposed methods with existing state-of-the-art methods will be conducted to evaluate their performance.
- Assessment of the accuracy of the proposed method in identifying the photovoltaic parameters under different environmental conditions in Kingdom of Saudi Arabia.
- Grant Number (PS00350061) from IIE/The Fulbright Program.
- Duration: Aug-2023 ongoing till Jun-2024.
- Grant Rule: Principal investigator (PI)

- **Energy hub optimal operation strategies considering stochastic renewable energy resources and storage devices (72,400 SAR)**

  - Designing an energy hub system that is optimal from an economic and environmental perspective Analysing electricity, thermal, and ice storage devices for an energy hub's optimal operation.
  - Analyzing the uncertainty associated with renewable energy and load demands in the development of a scenario-based optimization model for EHs.
  - Evaluating the effects of gas storage, and power-to-gas units on the optimal operation of the EH systems.
  - Grant Number (IFP-2022- 35) from Ministry of Education University.
  - Duration: Nov-2022 till Aug-2023.
  - Grant Rule: Principal investigator (PI)

- **Optimal Planning of Hybrid Standalone Renewable Energy System Considering Uncertainty of Power Generation and Time-Varying Load (90,400 SAR)**

  - Develop commercial and educational power systems analysis tools for optimal design of HRES for remote areas in Kingdom of Saudi Arabia.
  - Determining the best configuration (PV/BES, wind/ BES, biomass/ BES, hybrid PV/wind/biomass/diesel BES) which provides the most technically and economically viable solution to supply the electricity for remote areas.
  - Grant Number (IFP-2020-06) from Ministry of Education University.
  - Duration: Sep-2020 till Aug-2021.
  - Grant Rule: Principal investigator (PI)

- **Advanced Renewable Energy Management and Control Systems (62,400 SAR)**

  - Leading a group of researcher to an accomplishes the target of publications in prestigious scientific journals.
  - Grant Number (RGP-2019-19) from Majmaah University.
  - Duration: Sep-2019 till May-2021.

Grant Rule: Principal investigator (PI)

RESEARCH PUBLICATIONS

1. **Alghamdi, Ali S.** 2024. "Optimizing Microgrid Performance: Integrating Unscented Transformation and Enhanced Cheetah Optimization for Renewable Energy Management" *Electronics* 13, no. 22: 4563.

2. **Ali S. Alghamdi**, “Microgrid energy management and scheduling utilizing energy storage and exchange incorporating improved gradient-based optimizer”, Journal of Energy Storage, Volume 97, Part A, 2024, 112775.

3. **Alghamdi, Ali S.** 2024. "Cost-Effective Planning of Hybrid Energy Systems Using Improved Horse Herd Optimizer and Cloud Theory under Uncertainty" *Electronics* 13, no. 13: 2471.

4. **Ali S. Alghamdi**, Mohamed A. Zohdy, "Boosting cuckoo optimization algorithm via Gaussian mixture model for optimal power flow problem in a hybrid power system with solar and wind renewable energies", Heliyon, Volume 10, Issue 11, 2024, e31755,

5. **Ali S. Alghamdi**, Mohamed A. Zohdy., and Saad Aldoihi. et al. (2024). Enhancing Renewable Energy Integration: A Gaussian-Bare-Bones Levy Cheetah Optimization Approach to Optimal Power Flow in Electrical Networks. *CMES-Computer Modeling in Engineering & Sciences*, 140(2), 1339-1370.

6. **Ali S. Alghamdi**, "Optimizing energy costs and reliability: A multi-objective framework with learning-enhanced manta ray foraging for hybrid PV/battery systems", *Energy*, Volume 291, 2024,130346.

7. **Alghamdi, Ali S.**, Alanazi, M., Alanazi, A., Qasaymeh, Y., Zubair, M. et al. (2023). Stochastic Programming for Hub Energy Management Considering Uncertainty Using Two-Point Estimate Method and Optimization Algorithm. *CMES-Computer Modeling in Engineering & Sciences*, 137(3), 2163–2192.

8. **Alghamdi, Ali S.** 2023. "Optimal Power Flow of Hybrid Wind/Solar/Thermal Energy Integrated Power Systems Considering Costs and Emissions via a Novel and Efficient Search Optimization Algorithm" *Applied Sciences* 13, no. 8: 4760.

9. Mengistu, Epaphros, Baseem Khan, Yazeed Qasaymeh, **Ali S. Alghamdi**, Muhammad Zubair, Ahmed Bilal Awan, Muhammad Gul Bahar Ashiq, Samia Gharib Ali, and Cristina Mazas Pérez-Oleaga. 2023. "Utilization of Stockwell Transform, Support Vector Machine and D-STATCOM for the Identification, Classification and Mitigation of Power Quality Problems" *Sustainability* 15, no. 7: 6007.

10. **Alghamdi, Ali S.**, Mohana Alanazi, Abdulaziz Alanazi, Yazeed Qasaymeh, Muhammad Zubair, Ahmed Bilal Awan, and Muhammad Gul Bahar Ashiq. 2023. "Energy Hub Optimal Scheduling and Management in the Day-Ahead Market Considering Renewable Energy Sources, CHP, Electric Vehicles, and Storage Systems Using Improved Fick's Law Algorithm" *Applied Sciences* 13, no. 6: 3526.

11. **Alghamdi, Ali S.** 2022. "A Hybrid Firefly–JAYA Algorithm for the Optimal Power Flow Problem Considering Wind and Solar Power Generations" *Applied Sciences* 12, no. 14: 7193. ISI (IF:2.84)

12. **Alghamdi AS** (2022) "Optimal Power Flow of Renewable-Integrated Power Systems Using a Gaussian Bare- Bones Levy-Flight Firefly Algorithm." Front. Energy Res. 10:921936. ISI (IF:4.00)

13. **Alghamdi, Ali S.** 2022. "Greedy Sine-Cosine Non-Hierarchical Grey Wolf Optimizer for Solving Non-Convex Economic Load Dispatch Problems" *Energies* 15, no. 11: 3904. ISI (IF:3.00)

14. **A. S. Alghamdi**, "A New Self-Adaptive Teaching–Learning-Based Optimization with Different Distributions for Optimal Reactive Power Control in Power Networks," Energies, vol. 15, no. 8, p. 2759, Apr. 2022. ISI (IF:3.00)

15. Ali Siddique, Abdul Rauf Bhatti, Ahmed Bilal Awan, Arslan Dawood Butt, **Ali S. Alghamdi**, Muhammad Farhan & Nadia Rasheed (2021) "Efficient video transmission—a critical review of various protocols and strategies", Journal of the Chinese Institute of Engineers, 44:8, 740-750. ISI (IF: 1.14)

16. Qasaymeh, Yazeed, Abdullah Almuhaisen, and **Ali S. Alghamdi**. 2021. "A Compact Sequentially Rotated Circularly Polarized Dielectric Resonator Antenna Array" *Applied Sciences* 11, no. 18: 8779. ISI (IF: 2.67)

17. Hussein Abdel-Mawgoud, Salah Kamel, Sinan Q. Salih, **Ali S. Alghamdi**. 2021."Optimal integration of capacitor and PV in distribution network based on nomadic people optimizer". Indonesian Journal of Electrical Engineering and Computer Science. 23, no 3, 1237-1248. Scopus (IF: 2.00)

18. **Alghamdi, A. S.** (2021). "Integration of Virtual Resistor in Charging Control System of Electric Vehicles to Mitigate the Harmonic Issues at Power Grid Side". International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies, 12(3), 12A3T, 1-16.

19. Kharrich, Mohammed, Salah Kamel, **Ali S. Alghamdi**, Ahmad Eid, Mohamed I. Mosaad, Mohammed Akherraz, and Mamdouh Abdel-Akher. 2021. "Optimal Design of an Isolated Hybrid Microgrid for Enhanced Deployment of Renewable Energy Sources in Saudi Arabia" *Sustainability* 13, no. 9: 4708.

20. Abo-Khalil, Ahmed G., and **Ali S. Alghamdi** 2021. "MPPT of Permanent Magnet Synchronous Generator in Tidal Energy Systems Using Support Vector Regression" *Sustainability* 13, no. 4: 2223.

21. Kharrich, Mohammed, Salah Kamel, Rachid Ellaia, Mohammed Akherraz, **Ali S. Alghamdi**, Mamdouh Abdel-Akher, Ahmad Eid, and Mohamed I. Mosaad 2021. "Economic and Ecological Design of Hybrid Renewable Energy Systems Based on a Developed IWO/BSA Algorithm" *Electronics* 10, no. 6: 687.

22. **Alghamdi, Ali S.** 2021. "Performance Enhancement of Roof-Mounted Photovoltaic System: Artificial Neural Network Optimization of Ground Coverage Ratio" *Energies* 14, no. 6: 1537.

23. Ahmed, D.; Ebeed, M.; Ali, A.; **Alghamdi, A.S.**; Kamel, S. "Multi-Objective Energy Management of a Micro-Grid Considering Stochastic Nature of Load and Renewable Energy Resources". *Electronics* 2021, *10*, 403.

24. Abo-Khalil, AG, Eltamaly, AM, Alsaud, MS, Sayed, K, **Alghamdi, AS.** "Sensorless control for PMSM using model reference adaptive system". Int Trans Electr Energ Syst. 2021; 31: e12733.

25. H. M. Sultan, A. S. Menesy, S. Kamel, **A. S. Alghamdi** and C. Rahmann, "Optimal Design of a Grid-Connected Hybrid Photovoltaic/Wind/Fuel Cell System," *2020 IEEE Electric Power and Energy Conference (EPEC)*, 2020, pp. 1-6.

26. M. Bastawy, M. Ebeed, A. Rashad, **A. S. Alghamdi** and S. Kamel, "Micro-Grid Dynamic Economic Dispatch with Renewable Energy Resources Using Equilibrium Optimizer," 2020 IEEE Electric Power and Energy Conference (EPEC), 2020, pp. 1-5.

27. **Alghamdi, A. S.**, Sayed, K., Abokhalil, Awan, A. B., Mohamed A. Zohdy, M. A. (2021). A Soft Switching DC-Link Quasi Resonant Three-Phase Inverter for AC Servo-Motor Drive Applications. International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies, 12(1), 12A1N, 1-13.

28. Awad, A., Kamel S., **Alghamdi, A.S.**, Jurado, F., Zohdy, M. (2021). C-UPFC Modeling in NEPLAN for Power Flow Analysis. International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies, 12(1), 12A1F, 1-11.

29. R.P. Praveen, Vishnu Keloth, Ahmed G. Abo-Khalil, **Ali S. Alghamdi**, Ali M. Eltamaly, Iskander Tlili, "An insight to the energy policy of GCC countries to meet renewable energy targets of 2030", Energy Policy, Volume 147, 2020.

30. Amlak Abaza, Asmaa Fawzy, Ragab A. El-Sehiemy, **Ali S. Alghamdi**, Salah Kamel, "Sensitive reactive power dispatch solution accomplished with renewable energy allocation using an enhanced coyote optimization algorithm", Ain Shams Engineering Journal, 2020.

31. Abo-Khalil, Ahmed G.; Eltamaly, Ali M.; R.P., Praveen; **Alghamdi, Ali S.**; Tlili, Iskander. 2020. "A Sensorless Wind Speed and Rotor Position Control of PMSG in Wind Power Generation Systems." *Sustainability* 12, no. 20: 8481.

32. **A. S. Alghamdi**, K. Hua, M. Zohdy, A. Al-Ahmadi, A. G. Abo-Khalil and Y. Qasaymeh, "Unscented Kalman Filter for Indoor Bluetooth Voice Transmission Interference over Non-Gaussian Fading Channel," *2020 IEEE 6th World Forum on Internet of Things (WF-IoT)*, New Orleans, LA, USA, 2020, pp. 1-6, doi: 10.1109/WF-IoT48130.2020.9221365.

33. Sultan, H. M., Menesy, A. S., Kamel, S., **Alghamdi, A. S.**, Zohdy, M. (2020). Optimal Sizing of Isolated Hybrid PV/WT/FC System Using Manta Ray Foraging Optimization Algorithm. International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies, 11(16), 11A16H, 1-12.

34. T. A. Jumani, M. W. Mustafa, **Ali S. Alghamdi**, M. M. Rasid, A. Alamgir and A. B. Awan, "Swarm Intelligence-Based Optimization Techniques for Dynamic Response and Power Quality Enhancement of AC Microgrids: A Comprehensive Review," in IEEE Access, vol. 8, pp. 75986-76001, 2020. ISI (IF: 3.74)

35. Ashraf, Naveed; Izhar, Tahir; Abbas, Ghulam; Awan, Ahmed B.; **Alghamdi, Ali S.**; Abo-Khalil, Ahmed G.; Sayed, Khairy; Farooq, Umar; Balas, Valentina E. 2020. "A New Single-Phase Direct Frequency Controller Having Reduced

Switching Count without Zero-Crossing Detector for Induction Heating System." *Electronics* 9, no. 3: 430. ISI (IF: 2.41)

36. A. Selim, S. Kamel, **A. S. Alghamdi** and F. Jurado, "Optimal Placement of DGs in Distribution System Using an Improved Harris Hawks Optimizer Based on Single- and Multi-Objective Approaches," in IEEE Access, vol. 8, pp. 52815-52829, 2020. ISI (IF: 3.74)

37. J. P. Therattil, RP Praveen, Jenson Jose, Ahmed Abo-Khalil, **Ali S. Alghamdi**, GR Bindu, Khairy Sayed "Hybrid control of a multi-area multi-machine power system with FACTS devices using non-linear modelling," in IET Generation, Transmission & Distribution, vol. 14, no. 10, pp. 1993-2003, 22 5 2020. ISI (IF: 3.22)

38. Paracha, K.N.; Butt, A.D.; **Alghamdi, A.S**.; Babale, S.A.; Soh, P.J. "Liquid Metal Antennas: Materials, Fabrication and Applications". *Sensors* 2020, *20*, 177. ISI (IF: 3.03)

39. Khaled Daqrouq , Abdel-Rahman Al-Qawasmi , Ahmed Balamesh, **Ali S. Alghamdi** , and Mohamed A. Al-Amoudi. "The Use of Arabic Vowels to Model the Pathological Effect of Influenza Disease by Wavelets" Computational and Mathematical Methods in Medicine Volume 2019, 8 pages. ISI (IF: 1.56)

40. Abo-Khalil, Ahmed G.; Alghamdi, Ali S.; Eltamaly, Ali M.; Al-Saud, M. S.; R. P., Praveen; Sayed, Khairy; Bindu, G. R.; Tlili, Iskander. 2019. "Design of State Feedback Current Controller for Fast Synchronization of DFIG in Wind Power Generation Systems." *Energies* 12, no. 12: 2427. ISI (IF: 2.70)

41. Sayed, Khairy; Abo-Khalil, Ahmed G.; **S. Alghamdi, Ali**. 2019. "Optimum Resilient Operation and Control DC Microgrid Based Electric Vehicles Charging Station Powered by Renewable Energy Sources." *Energies* 12, no. 22: 4240. ISI (IF: 2.70)

42. Muhammad Rashid, **Ali S Alghamdi**, Q Mahmood, M Hassan, M Yaseen, and A Laref. "Optoelectronic and thermoelectric behavior of XIn2Te4 (X = Mg, Zn and Cd) for energy harvesting application; DFT approach" *et al* 2019 *Phys. Scr.* 94 125709. ISI (IF: 2.15)

43. **A. S. Alghamdi**, "Design a Universal Remote Controlled Thermostat Based on FPGA," *2019 6th International Conference on Control, Decision and Information Technologies (CoDIT)*, Paris, France, 2019, pp. 918-921.

44. A. Al-Ahmadi, Y. M. Qasaymeh, P. R. P., and A. Alghamdi, "Bayesian Approach for Indoor Wave Propagation Modeling," Progress In Electromagnetics Research M, Vol. 83, 41-50, 2019.

45. Uddin, R., **Alghamdi, A.S**., Uddin, M.H. et al. "Ethernet-Based Fault Diagnosis and Control in Smart Grid: A Stochastic Analysis via Markovian Model Checking", J. Electr. Eng. Technol. (2019) 14: 2289. ISI (IF: 0.64)

46. A. G. Abo-Khalil, **A. Alghamdi**, I. Tlili and A. M. Eltamaly, "Current controller design for DFIG-based wind turbines using state feedback control," in *IET Renewable Power Generation*, vol. 13, no. 11, pp. 1938-1948, 19 8 2019. ISI (IF: 3.60)

47. Khan, I.A.; **Alghamdi, A.S**.; Jumani, T.A.; Alamgir, A.; Awan, A.B.; Khidrani, A. "Salp Swarm Optimization Algorithm-Based Fractional Order PID Controller for Dynamic Response and Stability Enhancement of an Automatic Voltage Regulator System". *Electronics* 2019, *8*, 1472. ISI (IF:1.76)

48. Ali, H. S.; **Alghamdi, Ali S.**; Murtaza, G.; Arif, H. S.; Naeem, Wasim; Farid, G.; Sharif, Sadia; Ashiq, Muhammad G.B.; Shabbir, Syeda A. 2019. "Facile Microemulsion Synthesis of Vanadium-Doped ZnO Nanoparticles to Analyze the Compositional, Optical, and Electronic Properties." *Materials* 12, no. 5: 821. ISI (IF:2.97)

49. Kun Hua, Xing Liu, Zheyi Chen, **Ali S. Alghamdi**, Mahdi N. Ali. “An Efficient Cross-layer Approach for Throughput-Maximal and Delay-Minimal Green Vehicular Networks” accepted in ICNC 2018, Maui, Hawaii, USA, March 5-8, 2018.

50. **Alghamdi, A.**, Ali, M., Zohdy, M., and Kun Hua. “Non-Coherent Demodulation in Bluetooth Voice Transmission using Unscented Kalman Filter in Fading Channel with Non-Gaussian Noise” in progress to submitted to Journal of Signal and Information Processing.

51. K. Hua, W. Wang, H. Wang, **A. Alghamdi,** ``Multiplexing-Diversity Balanced Cooperative Wireless Cellular Networks Based on Alamouti Space Time Code for Multimedia Transmission,'' in Proc. IEEE Global Communications Conference (GLOBECOM), 5pp, Dec. 2012.

52. **Alghamdi Ali S.**, KENAYA RIYADH L., "FPGA Based IR Code Recognizer", in the Book "Applied Mathematics in Electrical and Computer Engineering", CIRCUITS, SYSTEMS, SIGNAL and TELECOMMUNICATIONS (CSST'12), Cambridge, MA, USA, January 25-27, 2012, pp. 286-291.

53. **Alghamdi Ali**, Kun Hua, “An Adaptive Modulation Scheme in Wireless Multimedia Sensor Networks,” 2nd IEEE Workshop on Multimedia Communications & Services, and 45th Annual Simulation Symposium- IEEE GLOBECOM 2011, Houston, Texas, U.S.A, Dec 2011.

TECHNICAL PROJECTS

- **Design a Robust Modulation Scheme in Bluetooth Voice Transmission using Kalman Filter**
  - Developed the Bluetooth is modulated and demodulated by Gaussian frequency shift key (GFSK) technique over additive white Gaussian noise (AWGN) channel.
  - Tested on vehicle telematics system.

- **Design a Digital Controller for Digital Camera**
  - Developed a digital controller meet specific requirements to increase the speed of step response. Specifically, compensators that design in order to reduce time response for high quality picture snap.

- **Channel Equalizer using Constant-Modulus Algorithm**
  - Developed a channel equalization scheme using C-M algorithm for PSK modulation. Parallel systematic implementation improved the receiving signal detection for communication system suitable in synchronization.

SKILLS

- ***Programming Languages***
  - C/ C++
  - MySQL for Oracle
  - JAVA script
  - Matlab script file
  - VHDL

- ***Simulation Software***
  - Pspice and Micro-cap Circuits Analysis
  - Simulink Model Design and Analysis
  - Maple Math tools and Maple Sim