ADNAN M. SALMAN

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An-najah National University

RESEARCH INTEREST

Machine Learning, High Performance Computing, Computational Head Modeling, Computational Science

EDUCATION

University of Oregon – Eugene, Oregon, USA *August 2004 - 2009*
Ph.D. Computer and Information Science
Department of Computer Science
Dissertation Title: "A software framework for simulation-based scientific investigations"
Research Advisor: Allen D. Malony

University of Oregon – Eugene, Oregon, USA *1999-2001*
M.S. Computer and Information Science June, 2001
Track: Computer Graphics and Image Science

University of Utah - Salt Lake City, Utah, USA *1994-1997*
M.S. Physics June, 1997
Track: Cosmic Ray

An-Najah National University - Nablus, Palestine 1986-1992
B.S. Physics June 1992

PROFESSIONAL EXPERIENCE

An-Najah National University – Nablus, Palestine
Assistant Professor of Computer Science 8/2012 -– present
Department chair – Computer Science 8/2013 — 8/2016
Director – Master's program in Advanced Computing 2/2010–7/2012

University of Oregon – Eugene, OR, USA
Computational scientist – NeuroInformatic Center 2/2010-7/2012
Graduate Research Fellow – NeuroInformatic Center 8/2013 — 8/2016
Director – Master's program in Advanced Computing 6/2004–1/2010

The Arab-American University – Palestine
Computer Science Department – Lecturer 2001-2003

University of Utah, Utah, USA
Graduate Research Fellow – Cosmic Ray Detector 1995-1998

TEACHING EXPERIENCE

Graduate Courses
Advanced Data Structures and Algorithms, High Performance Computing, Digital Image Processing

Undergraduate Courses
Machine Learning, Parallel and Distributed Computing, Computer Graphics, Computer Networks, Numerical

Analysis, Linear Algebra, Digital Logic, Computer Architecture, Algorithms, Data structure, Programming, Linux.

RESEARCH EXPERIENCE

An-najah National University

- **Medical Imaging (active):** Cancer detection from CT imaging using machine learning and image processing. Epilepsy detection from EEG signals using machine learning and signal processing.
- **Smart Agriculture (active):** Devloping a smart irrigation system using IoT devices .
- **Traffic Management (active:)** Developing a traffic monitering system.

University of Oregon

- **Computational Head Modeling**: Worked on methods to improve the estimation of human head conductivity; Emplemented an effecient HPC solution to the forward problem ported to CUDA platform and the cell processor .
- **Scientific Computational Environment**: Developed a computational science platform for scientific investigation, which was evaluated on the computational human head and computational chemistry domains.

University of Utah

- **Cosmic Ray Detector**: Intensive modeling and simulation; data analysis, operation of the detector.

THESIS ADVISING

- Master thesis supervisor of Amani Hakawati (Title: Risk Prediction Of Traffic Accidents Using Machine Learning, Advanced Computing, expected defense (fall 2021) .
- Master thesis supervisor of Isam Jazzar (Title: Feature Extraction of EEG Signal to Classify Epileptic Signal Using Neural Network, Advanced Computing, (4/9/2020) .
- Master thesis supervisor of Deema Sawalha (Title: Design and Implementation of Digital System for Lung Cancer Early Detection Using Neural Network and Image Processing, (3/2021) .
- Master thesis supervisor of Mohammad Fadi Abdel-Haq (Title: Developing Wireless Sensor Network for Traffic Monitoring, advanced computing (10/2019) .
- Master thesis supervisor of Areen Ziad Ali Naji (Title: Wireless Sensor Network for Smart Irrigation System, advanced computing (3/2019) .
- Master thesis supervisor of Mustaf Younes (Title: A Cloud Application for Smart Agricultural Irrigation Management System, advanced computing (12/2018) .
- Master thesis supervisor of Mohammed Aburidi (Title: A Comparative Study of the Regularization Parameter Estimation Methods for the EEG Inverse Problem, Advanced Computing, (2016) .

PUBLICATIONS

1 **Adnan Salman** and Yamama Shaka'a, "Automated Water Demand Forecasting for National-Scale Deployment: A Prophet-Based Framework for Palestinian Municipal Water Management." Scientific Reports, ahead of print, January 3, 2026. https://doi.org/10.1038/s41598-025-33060-0.

2 Yousef Taha, Yazeed Rashed and **Adnan Salman**, "Optimizing Pneumonia Detection from Chest X-Rays: A Performance Comparison of Lightweight Cnns and Ensemble Methods," 2025 13th International Conference on Bioinformatics and Computational Biology (ICBCB), Seoul, Korea, Republic of, 2025, pp. 42-48, doi: 10.1109/ICBCB64873.2025.11198097.

3 Deema Sohrab, **Salman, Adnan**, "Lung Cancer Detection from CT Images Using Image Processing and Machine Learning Techniques", 2023 10th International Conference on Electrical and Electronics Engineering (ICEEE), pp. 24-30, doi: 10.1109/ICEEE59925.2023.00012

4 **A. Salman**, "Epilepsy detection from EEG data using 2D Convolutional Neural Network," 2021 6th International Conference on Communication, Image and Signal Processing (CCISP), 2021, pp. 101-108, doi: 10.1109/CCISP52774.2021.9639256.

5 Naser, Shanti, Akram Assi, Hamza Shakhshir, and **Adnan Salman**, Machine Learning-Powered Mobile App for Predicting Used Car Prices, (BDSIC 2021): 3rd International Conference on Big-data Service and Intelligent Computation. ACM, NY, USA. doi: 10.1145/3502300.3502307

6 Areen Z.A. Naji and **Adnan Salman**. 2021. Water Saving in Agriculture through the Use of Smart Irrigation System. In 4th International Conference on Data Storage and Data Engineering (DSDE 2021). ACM, NY, USA, 153–160. DOI:https://doi.org/10.1145/3456146.3456170 **(Best paper award)**.

7 Mustafa Younes and **Adnan Salman**, A Cloud-Based Application for Smart Irrigation Management System, In 8th International Conference on Electrical and Electronics Engineering (ICEEE), 2021, pp. 85-92, doi: 10.1109/ICEEE52452.2021.9415913.

8 Mohammd Fadi AbdelHaq and **Adnan Salman**, Wireless Sensor Network for Traffic Monitoring, International Conference on Promising Electronic Technologies (ICPET), 2020, pp. 16-21, doi: 10.1109/ICPET51420.2020.00012 **(Best paper award)**.

9 Ata Aburajab and **Adnan Salman**, Interactive Blackboard for Web-based Real-time Tutoring System, 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), 2019, pp. 63-68, doi: 10.1109/JEEIT.2019.8717458.

10 Mohammed Aburidi and **Adnan Salman**, Normalized Cumulative Periodogram Method For Tuning A Regularization Parameter of The EEG Inverse Problem, The Journal of Middle East and North Africa sciences, 4(02).

11 L. Adardour, M. Larouj, H. Lgaz, M. Belkhaouda , R. Salghi*, S. Jodeh* , **A. Salman***, H.Oudda and M. Taleb, "Eco-friendly Inhibition Corrosion of Carbon Steel in Acidic Solution using the Oil of Citrus Leaves" , Der Pharma Chemica, 2016, 8(3):152-160.

12 B El Makrini, M Larouj, Hassane Lgaz, Rachid Salghi, **Adnan Salman**, M. Belkhaouda, Shehdeh Jodeh, Mohammed Zougagh, H. Oudda, Experimental and theoretical investigation of sulfadiazine as a corrosion inhibitor for carbon steel in HCl medium, Der Pharma Chemica 8(2):227-237.

13 **Adnan Salman**, Allen Malony, S.Turovets, Vasily Volkov, David Ozog, Don Tucker, "Concurrency in electrical neuroinformatics: Parallel computation for studying the volume conduction of brain electrical fields in human head tissues", Concurrency and Computation Practice and Experience, July 2015.

14 **Adnan Salman**, Allen Malony, S. Turovets, Vasily Volkov, David Ozog, Don Tucker, " Next-Generation Human Brain Neuroimaging and the Role of High-Performance Computing ", International Conference on High Performance Computing and Simulation (HPCS), 2013; 01/2013

15 **Adnan Salman**, Allen Malony, Vasily Volkov, Sergei Turovets and Don Tucker, "Modeling Anisotropic forward solver for EEG source analysis on the GPU", GPU Technology Conference 2012, San Jose, California, may 14-17, 2012. (poster)

16 Allen D. Malony, **Adnan Salman**, Sergei Turovets, Don Tucker, Vasily Volkov, Kai Li, Jung Eun Song, Scott Biersdorff, Colin Davey, Chris Hoge and David Hammond, "Computational Modeling of Human Head Electromagnetic for Source Localization of Milliscale Brain Dynamics" in ud Health Technol Inform. 2011;163:329-335, February 2011.

17 Sergei Turovets, **Adnan Salman**, Allen Malony, Kai Li, D. Tucker, "P19-13 Towards combined neuroimaging modalities: EEG and bounded EIT", Clinical Neurophysiology - CLIN NEUROPHYSIOL. 01/2010; 121.

18 Sergei Turovets,**Adnan Salman**, Kai Li, Allen Malony and Don Tucker, "Towards combined neuroimaging modalities: EEG and bounded EIT" in International Congress of Clinical Neurophysiology, Japan, October 2010 (Poster).

19 Sergei Turovets, **Adnan Salman**, Kai Li, Allen Malony, Don Tucker, "Towards Subject Specific Head Models for Improved High-Resolution EEG", Annual Meeting of the Organization for Human Brain Mapping, June 2010 (Poster).

20 **Adnan Salman**, Allen Malony, Matthew Sottile, "An Open Domain-extensible Environment for Simulation-based Scientific Investigation (ODESSI)" in International Conference on Computational Science (ICCS 2009), Baton Rouge, Louisiana, U.S.A, 2009.

21 Sergei Turovets, Pieter Poolman, **Adnan Salman**, Kai Li, Allen Malony and Don Tucker, "Bounded Electrical Impedance Tomography for Noninvasive Conductivity Estimation of Human Head Tissues" in Electrical Impedance Tomography Conference (EIT 2009), June 2008, Manchester.

22 **Adnan Salman**, Allen Malony, Sergei Turovets, and Don Tucker, "On the Role of Skull Parcellation in the Computational Modeling of Human Head Conductivity", in Electrical Impedance Tomography Conference (EIT Conference 2008), pp. 16-18 June, 2008, Dartmouth College, New Hampshire.

23 S. I. Turovets, P. Poolman, A. Salman, A. D. Malony and D. M. Tucker, "Conductivity Analysis for High-Resolution EEG," 2008 International Conference on BioMedical Engineering and Informatics, 2008, pp. 386-393, doi: 10.1109/BMEI.2008.358.

24 **Adnan Salman**, Allen Malony, Sergei Turovets, and Don Tucker, "Use of Parallel Simulated Annealing for Computational Modeling of Human Head Conductivity" in International Conference on Computational Science (ICCS 2007), Y. Shi et al. (Eds.), LNCS 4487, pp. 86-93, July 2007. **(Best paper award)**

25 **Adnan Salman**, Allen Malony, Sergei Turovets, Alan Morris, and Don Tucker, "Modeling Human Head Electromagnetic on the Cell Broadband Engine," in Workshop on Solving Computational Challenges in Medical Imaging, Seattle, 2007. (Poster)

26 **Adnan Salman**, Sergei Turovets, Allen Malony, Pieter Poolman, Collin Davey, Jeff Eriksen, and Don Tucker, "Noninvasive conductivity extraction for high-resolution EEG source localization", in Advances in Clinical Neuroscience and Rehabilitation, 6(1), pp. 27-28, March 2006.

27 Sergei Turovets, **Adnan Salman**, Allen Malony, Jeff Eriksen, and Don Tucker, "Anatomically Constrained Conductivity Estimation of the Human Head Tissues in Vivo: Computational Procedure and Preliminary Experiments" in 7-th Electrical Impedance Tomography (EIT) Conference, 2006.

28 **Adnan Salman**, Sergei Turovets, Allen Malony, Jeff Eriksen, and Don Tucker, "Computational Modeling of Human Head Conductivity" in International Conference on Computational Science (ICCS 2005), V.S. Sundrem et al. (Eds.), LNCS 3514, pp. 631-638, May 2005. **(Best paper award)**

29 **Adnan Salman**, Sergei Turovets, Allen Malony, and Vasily Volkov, "Multi-cluster, Mixed-mode Computational Modeling of Human Head Conductivity" in International Workshop on OpenMP (IWOMP), June 2005.

30 Ledvina Steven, Cravens Tom, and **Adnan Salman**, "Trajectories in Saturn's Magnetosphere Near Titan", Adv. Space Res., 26, 1691, 2000.

31 C. R. Wilkinson, **A. Salman**, et al, "Geometrical Reconstruction with the High Resolution Fly's Eye Prototype Cosmic Ray Detector", Astroparticle Physics, 12, 121-134.

32 L. R. Wiencke; **A. Salman**, et. al. Radio-controlled xenon flashers for atmospheric monitoring at the HiRes cosmic ray observatory, Nuclear Instruments and Methods in Physics Research A 428, (1999), 593–607

33 **A. Salman**, S. I. Turovets, A. Malony, C. Davey, D. Tucker. Anatomically constrained conductivity estimation of the human head tissues in vivo: Computational procedure and preliminary experiments, Nuclear Instruments and Methods in Physics Research A 428, (1999), 593–607