

# Prof. Oguz Bayat

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## Education

### **Massachusetts Institute of Technology, Boston, MA**

Executive certificate in Management and Leadership, March 2009

### **Northeastern University, Boston, MA**

#### **PhD, concentration in Electrical engineering, September 2006**

Dissertation: Adaptive and Iterative Equalization Transceiver Designs for Wireless Communication Applications

University of Hartford, West Hartford, CT

#### **Master of Engineering, concentration in Electrical Engineering, May 2002**

Master Thesis: Performance of Turbo Coded Signals in Satellite Channels

### **Istanbul Technical University, Istanbul, Turkey**

Bachelor of Science in Electrical Engineering, June 2000

## Work Experience

### **Yeditepe University, Istanbul, Turkey**

10/24 - Current

Vice president of R&D and Innovation

Professor, Department of Electrical-Electronics Engineering

### **Innovation Center Consultant, Istanbul, Turkey**

12/23 – 09/24

Professor, Department of Electrical-Electronics Engineering

### **Qualcomm Inc. Consultant partner, CA, USA**

09/20– 11/23

RFSW engineering, 5G handset RF module development for Apple and Samsung partners.

### **Altinbas University, Istanbul, Turkey**

04/11 – 09/21

Advisor To The President

Dean of Engineering and Architecture School Dean of Engineering and Architecture School

Professor in Software Engineering Department.

### **Bayt Technology, Istanbul, Turkey**

10/10 – 10/21

Found Bayt Tech. and opened a branch in İstanbul in 2010.

Found Sossa Inc. sold in 2011.

### **Airvana Inc., Chelmsford, MA, USA**

01/05 – 03/11

Technical Lead/Manager of RF/LAV engineering team

R&D on CDMA and WCDMA base stations products

R&D on Macrocell and smalcell technologies

### **Assistant Professor, Electronics and Communications Engineering Department 02/08 - 08/09**

Appointed in February 2008 and assigned to do research at Airvana Inc. until August 2009.

### **Northeastern University, Boston, MA**

09/02 - 12/04

Research & Teaching Assistant, Electrical and Computer Engineering Department

**Projects and  
Patents**

- Patents on wireless communication models, Macrocell and Femtocell applications.
- Founder of 3G, 4G, 5G Smallcell devices and its Applications
- Established a live radio access network and developed/Lead RF engineering group at Airvana USA. Installed and configured BTSs cell sites with RNCs to establish a research over the air live network setup
- Hired and trained engineers to analyze and to improve overall 1xCDMA network performance for several novel features and protocols such as ISSHO, A13, A16. Network parameters were characterized and optimized for 7 consecutive programs for Nortel project. Lab reports were generated and published for operators and partners successfully for several projects.
- Created innovative wireless communication models to provide more reliable and efficient communication over the air by improving channel coding and channel equalization techniques such as MLTC, MLTEQ, MLTEQ-CPM, DDFE schemes
- Designed and modeled joint decoding and equalization schemes for various modems
- Implemented and analyzed various kinds of filters onto TI chip for DSP hardware project.
- Designed and controlled mechatronics systems for industrial products
- Designed control systems for helicopter and aero-engine.

**Selected  
Publications**

- J Wang, J Weitzen, O Bayat, V Sevindik, M Li, Performance Model for Video Service in 5G Network *Future Internet* 2020
- J Wang, J Weitzen, O Bayat, V Sevindik, M Li, Interference coordination for millimeter wave communications in 5G networks for performance optimization, *EURASIP Journal on Wireless Communications and Networking* 2019
- J Wang, J Weitzen, V Sevindik, O Bayat, M Li, Dynamic Centralized Interference Coordination in Femto Cell Network with QoS Provision, Latest Trends on Communications, CSCC'14
- V Sevindik, J Wang, O Bayat, J Weitzen, Performance evaluation of a real LTE network, 37<sup>th</sup> Annual IEEE Conference on Local Computer Networks-Workshops 2012
- O. Bayat, Inter-Symbol interference cancellation in CDMA 1xEVDO, *Journal of Communication* 10.1002/dac.2418, September 2012
- V. Sevindik, O. Bayat, Packet Scheduling and Traffic Differentiation in Femtocell Environment, *IEICE Transactions on Communications*, Vol. E94-B, No:11, Pages 3018-3025, DOI: 10.1587/transcom.E94.B.3018, 2011
- V. Sevindik, O. Bayat, J. Weitzen, Scheduler Design for Traffic Classification in CDMA2000 1xEVDO Network, *Journal of Wireless Network (WINET)*, Vol. 17, No: 8, Pages 1731-1744, DOI 10.1007/s11276-011-0337-8, 2011
- V. Sevindik, O. Bayat, Packet Scheduling in Home and Business Femtocells, *Chapter in Wireless Multi-Access Environments and Quality of Service Provisioning: Solutions and Application*, IGI Global, PA,

- V. Sevindik, O. Bayat, J. Weitzen, Characterization of CDMA 1xEVDO Network for Inter-User class Users, *International Journal of Multimedia Tools and Applications*, DOI: 10.1007/s11042-010-0563-6 , July 2010
- V. Sevindik, O. Bayat, J. Weitzen, Performance Analysis of Inter-User Best Effort Class Users in CDMA 1xEVDO Network, *IEEE proceedings of International Symposium on Performance Analysis of Systems and Software*, Boston, MA, USA, April 2009
- O. Bayat, N. Odabasioglu, O. Osman, O. N. Ucan, M. Salehi and B. Shafai, Joint Multilevel Turbo Equalization and Continuous Phase Frequency Shift Keying, *EURASIP Journal on Wireless Communications and Networking*, doi:10.1155/2008/458785, 8 pages, December 2008
- O. Bayat, B. Shafai, M. Salehi, O. N. Ucan and O. Osman, Signalling Enhancement on Multilevel Turbo Codes, *International Journal of Communication Systems*, Volume 21, Issue 7 , Pages791 - 798, January 2008
- O. Bayat, W. Montlouis, B. Shafai, O. N. Ucan and O. Osman, Channel Estimation and Tracking of Wireless Communication, *IEEE proceedings of Military Communication Conf.*, Atlantic City, NJ, USA, Oct. 2005.
- W. Montlouis, O. Bayat and B. Shafai, DOA and Angular Velocity Estimation using Planar Array with Subspace Based Initialization, *IEEE proceedings of Military Communication Conf.*, Atlantic City, NJ, USA, Oct. 2005..
- O. Bayat, B. Shafai and O. N. Ucan, Iterative Equalization of Frequency Selective Channels, *IEEE proceedings of Sarnoff Symposium*, Princeton, USA, April 2005.
- O. Bayat, B. Shafai and O. N. Ucan, Reduced State Equalization of MLTC Signals, *IEEE proceedings of ICASSP, Philadelphia, PA, USA*, March 2005.
- O. Bayat, B. Shafai and O. N. Ucan, An Efficient Channel Equalization on the Transmission of Turbo Coded Signals, *proceedings of CIC Conference*, Las Vegas, Nevada, USA, June 2004.
- O. Bayat, H. Alnajjar, O. N. Ucan and O. Osman, Performance of Turbo Coded Signals over Fading Channels, *Journal of Electrical & Electronics*, Vol. 2, Num. 1, P. 417-422, ( 2002)

<b>Computer</b>	Matlab, C/C++, Java, Fortran77, PhP, Pspice, Vissim, Workbench, JMP IN, Mathematica, SPSS, ORCAD, AutoCAD, Remedy IR System, Lotus Notes, Freehand MX,
<b>Skills</b>	R&S products, Qualcomm Products (CAIT, QXDM, QPST), CLI, IBM Products (ClearCase, ClearQuest) DOS, Unix, Windows 3.x, 95/98, Windows NT, MS Office XP. (Microsoft Word, Excel, Power Point, FrontPage, Access), Microsoft Project
<b>Language Skills</b>	Fluent in English and Turkish and basic knowledge of German
<b>Activities</b>	IEEE ICEMIS Conference Chair, Editor of IJCS, Reviewer of IEEE ICC, IEEE Trans. on Wireless Comm., IEEE ACC and IEEE CDC-ECC, IU-JEE
<b>Awards</b>	<ul style="list-style-type: none"> <li>• Patents on Smallcell, femtocell and its applications 2010-2015</li> <li>• 9 Research Award by University , 2008-2009</li> </ul>

- Who'sWho in America 63rd Edition, 2009
- Certificate of Achievement for 8 consecutive projects by Airvana, 2005-2010
- Appointed as Assist. Professor in 2007 as Assoc. in 2013 as Full Prof. in 2018
- Patents application on MLTEQ and MLTEQ-CPM designs by Northeastern University - 2006
- Outstanding Research Award by Northeastern University - 2005
- Research Assistantship by Northeastern University - 2004
- Adjunct Faculty Position at University of Hartford - 2002
- Teaching Assistantship by University of Hartford - 2001