

# Ali Y. Panah

## Curriculum-Vita (C.V.)

*ayp@mail.utexas.edu*



The University of Texas at Austin - Electrical and Computer Engineering  
Wireless Networking and Communications Group (WNCG)

### Objective –

Combined studies in *engineering* and *business* to connect more people via advancements in the science of wireless communications with emphasis on economically viable solutions for rural America - and beyond.

### Brief Bio –

I was born on August 1<sup>st</sup> 1980 in Tehran, Iran. I received the B.Sc. degree from Sharif University of Technology, Tehran, Iran, in 2004 and the M.A.Sc. degree from Simon Fraser University, Burnaby B.C, Canada in 2007, both in electrical engineering. I am currently pursuing the Ph.D. degree at the Electrical and Computer Engineering Department at The University of Texas at Austin. My primary research interests span various topics in signal processing for wireless communications including OFDM channel estimation, MIMO communications and more recently cooperative communications in multi-user OFDM (OFDMA) systems. Since 2009 I have began taking MBA level courses at the McCombs School of Business at The University of Texas at Austin.

*This page was last updated on July 25<sup>th</sup> 2009*

### Education

#### Doctor of Philosophy (Ph.D)

*The University of Texas at Austin, United States of America*

Major in Electrical Engineering (Sep. 2007~)

G.P.A 3.945/4.0

Senior supervisor: Robert W. Heath, Jr, Professor, *rheath@ece.utexas.edu*

#### Masters of Applied Science (M.A.Sc)

*Simon Fraser University, Burnaby, British Columbia, Canada*

Major in Electrical Engineering (2007)

G.P.A 4.165/4.33

Thesis Title : “Non-Uniform Pilot Symbol Allocation for OFDM and MIMO-OFDM systems”

Senior supervisor: Rodney G. Vaughan, Professor, *rvaughan@sfu.ca*

#### Bachelors of Applied Science (B.Sc)

*Sharif University of Technology, Tebran, Iran*

Major in Electrical Engineering (2004)

G.P.A 16.7/20

Dissertation Title : “Hardware implementation of 3D Stereo Vision”

Senior supervisor: Kambiz Nayebi, Professor

### Research

1) **Primary:** Funded by *Sierra Wireless* (2004), *Samsung Electronics* (2007) and *Huawei* (2008-09) I conduct research in *Digital and Wireless Communications (MIMO, OFDM, OFDMA, Cooperative Communications)*

2) **Secondary:** Research on marketing aspects engineering (course work at MBA level).

(2007~present) **Cooperative Communications via Relaying** *LTE-A*

1. Power allocation strategies in single and multiuser-multicast OFDM relaying. (see [J4-5]).

2. Methods of channel estimation for cooperative networks. (see [J4]).

3. Two-way relaying (see [J5-7])

(2006~2007) **Orthogonal Frequency Division Multiple Access (OFDMA) 802.16e**

Developed an innovative method of improving channel estimation for OFDM-based systems using feedback; a technique compatible with multi-user scenarios such as WiMAX 802.16 (see [J2-3]).

(2004~2006) **Multiple-Input Multiple-Output (MIMO) 802.11n**

Worked on theoretical aspects of MIMO including limited feedback for space-time codes; compatible with multi-user scenarios such as WiMAX 802.16 (see [C1-C6]).

Journal - (available upon request)

[J1] M. Shariat, M. Ferdosizadeh, M.J. Abdoli, B. Makouei, **A.Yazdanpanah**, and F. Marvasti, “**Comparison between several methods of PPM demodulation based on iterative techniques,**” *Lecture Notes in Computer Science, Springer Publications*, vol. 3124, pp. 554-559, Jul. 2004.

[J2] **A. Y. Panah**, B. Nosrat-Makouei, and R. G. Vaughan, “**Non-uniform pilot-symbol allocation for closed-loop OFDM,**” *IEEE Transactions on Wireless Communications*, vol. 7, no. 7, pp. 2723–2731, Jul. 2008.

[J3] **A. Y. Panah**, R. W. Heath, Jr., “**Optimizing Pilot Locations Using Feedback in OFDM Systems,**” *IEEE Transactions on Vehicular Technology*, vol. 58, no. 6, pp. 2803-2814, Jul. 2009.

[J4] **A. Y. Panah**, R. W. Heath, Jr., “**Single-User and Multicast OFDM Power Loading with Non-Regenerative Relaying,**” accepted June 2009: *IEEE Transactions on Vehicular Technology*.

[J5] Steven Peters, **A. Y. Panah**, Kien T. Truong, and R. W. Heath, Jr., “**Relaying Architectures for 3GPP LTE-Advance,**” accepted May 2009 to: *EURASIP Journal on Wireless Communications and Networking*.

*Submitted/In-prep.*

[J6] **A. Y. Panah**, R. W. Heath, Jr., “**Cascaded and Disjoint PSAM-OFDM Channel Estimation for Amplify-and-Forward Relaying,**” submitted June 2009: *IEEE Transactions on Wireless Communications*.

[J7] **A. Y. Panah**, R. W. Heath, Jr., “**MIMO Two-way Relaying with Imperfect CSI,**” in preparation.

Conference

*2007*

[C1] B. N. Makouei, **A. Y. Panah**, and R. G. Vaughan, “**Pilot Feedback Equalization for Time-Varying OFDM Systems**” in *Proc. IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)*, Vancouver, Canada, Apr. 2007.

[C2] **A. Y. Panah**, B. N. Makouei and R. G. Vaughan, “**An Expectation - Maximization Solution to Interpolated OFDM Systems,**” in *Proc. IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)*, Vancouver, Canada, Apr. 2007.

[C3] **A. Y. Panah**, B. N. Makouei and R. G. Vaughan, “**OFDM with Cyclic-Pilot Time Diversity**”, in *Proc. IEEE Vehicular Technology Conference (66<sup>th</sup> Fall VTC)*, Oct. 2007, Baltimore, Maryland U.S.A.

*2006*

[C4] **A. Y. Panah** and R. G. Vaughan, “**Fault Tolerance of Quantized Unitary Precoders,**” in *Proc. IEEE Workshop on Signal Processing Systems Design and Implementation.(SIPS) '06*, pp. 298-302, Banff Alberta Canada., Oct. 2006.

[C5] **A. Y. Panah** and R. G. Vaughan, “**Quantized Unitary Precoders for Limited Feedback MIMO Systems,**” in *Proc. Wireless Personal Multimedia Communications Symposia (WPMC)*, San Diego California U.S.A., Sep. 2006.

[C6] **A. Y. Panah** and R. G. Vaughan, “**Diversity Performance of Quantized Unitary Precoders,**” in *Proc. International Wireless Communications and Mobile Computing Conference (IWCMC)*, pp. 449-454, Vancouver Canada, Jul. 2006.

*2005*

[C7] M. Shariat, M. Ferdosizadeh, M. Abdoli, B. N. Makouei, **A. Y. Panah**, and F. A. Marvasti, “**Comparison Between Several Methods of PPM Demodulation Based on Iterative Techniques,**” in *Proc. 11th International Conference on Telecommunications (ICT)*, pp. 554-559, vol. 3124, Fortaleza Brazil, Aug. 2004.

<b>Work Experience</b>	<ul style="list-style-type: none"> <li>Intern: <i>Huawei Technologies Ltd.</i> June-Aug 2009: Made IPR contribution to LTE-A for two-way relaying configurations.</li> </ul>
<b>Invited Talks</b>	<ul style="list-style-type: none"> <li>Title: “OFDM with Cyclic-Pilot Time Diversity” Date: Apr. 5<sup>th</sup> '07 Venue: SFU Webcasts on Communications Link: <a href="http://www.ensc.sfu.ca/research/sfusic/com-past-seminars">http://www.ensc.sfu.ca/research/sfusic/com-past-seminars</a></li> <li>Title: “MIMO Two-Way Relaying: Visions for LTE Advanced” Date: Jun. 5<sup>th</sup> '09 Venue: <i>Huawei Technologies Ltd.</i></li> </ul>
<b>Professional Services &amp; Membership</b>	<p><b>Memberships:</b> Institute of Electrical and Electronics Engineers (IEEE), Graduate Student Member</p> <p><b>Review Boards:</b> On the Editorial Review Board for the <i>International Journal of Communication Networks and Distributed Systems (IJCNDS)</i>.</p> <p>Also an active peer-reviewer for the following organizations (typically review 15+ papers a year)</p> <ul style="list-style-type: none"> <li><i>IEEE Transactions on Wireless Communications</i> IEEE Transactions on Wireless Communications was the number five most-cited journal in telecommunications in 2004, according to the annual Journal Citation Report (2004 edition) published by the Institute for Scientific Information.</li> <li><i>IEEE Transactions on Signal Processing</i></li> <li><i>IEEE Communications Letters</i></li> <li><i>The Institute of Engineering and Technology (IET) - Electronics Letters</i> Electronics Letters is internationally renowned for its rapid communication of new developments and emerging topics across the broad and interdisciplinary field of modern electronics and electrical engineering.</li> <li><i>Iranian Journal of Electrical and Computer Engineering (IJECE)</i></li> <li><i>IEEE Vehicular Technology Conference (semi-annual)</i></li> </ul>
<b>Volunteer Services</b>	<p><b>NGO: Youth Outreach Developments in Literacy YOUR-DIL</b></p> <ul style="list-style-type: none"> <li>Part of the “marketing” and “food-venue” committees for Austin chapter (<i>since Jan 2009</i>)</li> <li>Design flyers/posters/brochures for events</li> <li>Secure various sponsorships</li> </ul>
<b>Awards &amp; Distinctions</b>	<ul style="list-style-type: none"> <li>Two-time nominee and winner of the <i>Dean of Graduate Studies Fellowship</i> - Simon Fraser University, Canada (Summer 2005 and Spring 2007).</li> <li>Ranked 236<sup>th</sup> out of more than 350'000 participants in national undergraduate university entrance exam (konkooor), 1999 (Iran).</li> </ul>
<b>Software Experience</b>	<ul style="list-style-type: none"> <li><b>Matlab</b> (&amp; Simulink) – 8+ years experience</li> <li><b>LabVIEW</b> – 2 years experience. Implemented 802.11a in course project at UT in 2006.</li> <li><b>Graphical Design</b> – (Adobe Illustrator, Adobe Photoshop, Flash MX) worked as a graphical designer for 6 months in 2002.</li> <li><b>C/C++</b> – worked on various projects in undergrad courses.</li> </ul>
<b>Graduate Course Work</b>	Stochastic Systems, Statistical Signal Processing, Special Topics I (MIMO), Techniques in Digital Communications, Spread Spectrum Communications, Advanced Wireless Communications (MIMO), Wireless Communications Lab (LabVIEW), Information Theory, Linear Programming, Advanced Wireless Communications (Modulation), Data Mining for Business Marketing (McCombs Business School)
<b>Language Proficiency</b>	<p><b>TOEFL</b> 287/300 writing 5.5/6.0</p> <p><b>GRE</b> verbal 550 quantitative 780 writing 5.0/6.0</p> <p><b>TSE</b> 55/60 (test of spoken English)</p>
<b>Teaching and Research Experience</b>	
<b>Research Assistant (RA)</b>	<p>Research Assistant to <i>Dr. Rodney G. Vaughan</i> at Simon Fraser University</p> <p>Research Assistant to <i>Dr. Robert W. Heath Jr.</i> at UT-Austin</p>

**Teaching  
Assistant  
(TA)**

*Communication Systems* - Fall 2004 - 2006

*Linear Systems* - Spring & Summer 2005

*Electric Circuits II* - Summer 2005

*Digital Communications* - Spring 2006