

J. Patrick Frantz

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PROFESSIONAL PREPARATION:

Rice University, M.E.E. in Electrical Engineering, May 1997.

Rice University, B.S. in History, German and Political Science, May 1995.

APPOINTMENTS:

- 09/06-Pres. Manager, Japan Business Development, Processing Solutions Group, Xilinx, Inc.
- 08/00-Pres. Rice University, Adjunct Lecturer, Dept. of Electrical & Computer Engineering
- 06/06-09/06 Visiting Lecturer, Tohoku University, Sendai, Japan
- 07/05-08/05 Visiting Lecturer, Tokyo Institute of Technology, Tokyo, Japan
- 01/05-09/06 Rice University, Special Liaison for International Engineering Programs, International Programs
- 06/04-09/06 Rice University, Director, Electrical & Computer Engineering Industrial Affiliates Program
- 01/00-09/06 Rice University, Exec. & Tech. Director, Center for Multimedia Communication
- 06/98-04/00 Baylor College of Medicine, Electrical Engineer & Computer Programmer, Human Genome Sequencing Center, Dept. of Molecular & Human Genetics
- 05/97-06/98 Compaq Computer Corporation, Electrical Design Engineer, High End Server Development, Server Products Division

AWARDS & HONORS:

- 2006 Rice University Outstanding Young Engineering Alumnus

RELEVANT PUBLICATIONS:

1. Stephen So, Gerard Wysocki, J. Patrick Frantz and Frank Tittel, "Development of Digital Signal Processor-controlled Quantum Cascade Laser-based Trace Gas Sensor Technology," Accepted to IEEE Sensors, October 2006.
2. B. Johnston, X. Yin, A. Valenzuela, P. Frantz, "A Fast Algorithm and Testbed Evaluation for Sound Source Localization Using Sensor Networks," Appeared at IEEE Vehicular Technology Conference (VTC), Dallas, TX, September 2005.
3. Patrick Murphy, J. Patrick Frantz and Behnaam Aazhang, "Design of the Transit Access Point Platform." Appeared at European Signal Processing Conf., Antalya, Turkey, September 2005.
4. Erik Welsh, Walt Fish and J. Patrick Frantz, "GNOMES: A Testbed for Low-Power Heterogeneous Wireless Sensor Networks." Appeared at IEEE International Symposium on Circuits and Systems, Bangkok, Thailand, May 2003.

OTHER PUBLICATIONS:

1. C. Matherly, P. Frantz, S. Turner, and D. Gulick, "INNOVATE: Preparing Technical Graduates for the Global Workplace, Appeared at the 2nd International Conference on Knowledge, Technology and Society, Hyderabad, India, December 2005.
2. Yoji Yamada and J. Patrick Frantz, "ConnexionsプロジェクトによるDSP教育用コンテンツの開発。(The Development of DSP Education Content with the Connexions Project)" Appeared at Texas Inst. Japan 7th Annual DSPS Educators Conference, Tokyo, Japan, September 2005.
3. Cheryl A. Matherly and J. Patrick Frantz, "INNOVATE: Preparing Engineering Graduates To Be Global Leaders," Appeared at 4th Global International Internship Conference, Amsterdam, The Netherlands, April 2005.

4. J. Patrick Frantz, Richard Baraniuk, Hyokho Choi and Douglas L. Jones, "Multilingual Open-Content Signal Processing Laboratories in Connexions." Appeared at IEEE Tencon, Chiang Mai, Thailand, November 2004.

RESEARCH INTERESTS:

- DSP and FPGA-based hardware systems, mobile wireless devices, and communications algorithm implementations.
- International education for engineering students.

RECENT RESEARCH GRANTS:

- MRI: Development of WARPnet - A Platform for Programmable and Observable Deployed Wireless Networks, NSF, (Co-PI), 2006-2010, \$800,000, (with A. Sabharwal (PI), E. Knightly (Co-PI), J. Cavallaro (Co-PI), and B. Aazhang (Co-PI)).
- CRI: Wireless Open-Access Research Platform (WARP) - A Scalable and Extensible Testbed for High Performance Wireless Systems, NSF, (Co-PI), 2006-2010, \$1,500,000, (with A. Sabharwal (PI), E. Knightly (Co-PI), J. Cavallaro (Co-PI), and B. Aazhang (Co-PI)).
- PIRE: U.S.-Japan Cooperative Research and Education: Ultrafast and Nonlinear Optics in 6.1-Angstrom Semiconductors, NSF, (Co-PI), 2005-2010, \$2,200,000, (with J. Kono (PI), and C. Matherly (co-PI)).
- ITR: Wireless Transit Access Points: Enabling a Scalable, Deployable, High Performance Wireless Internet, NSF, (Co-PI), 2003-2008, \$2,400,000, (with E. Knightly (PI), B. Aazhang (Co-PI), A. Sabharwal (Co-PI), and D. Johnson (Co-PI)).

PRIOR TEACHING: Rice, ENGI 205: Topics in Global Leadership in Technology
Rice, ELEC 226: Microcontroller & Embedded Systems Laboratory
Rice, ELEC 424/427: High Speed & Embedded Systems Design I & II
Professional English Communications (Oral & Written)
- Tokyo Institute of Technology (2005) and Tohoku University (2006)

SYNERGISTIC ACTIVITIES:

- Collaboration with Texas Instruments Japan on the development of innovative web-based Japanese language teaching materials for DSP education. Materials are distributed openly via the Connexions project (<http://cnx.org>).

COLLABORATIONS & OTHER AFFILIATIONS:

- Cheryl Matherly, Rice University Career Services and International Programs, Co-Organizer of INNOVATE 2005 and 2006 conferences. Co-instructor for *ENGI 205: Topics in Global Leadership in Technology*.
- Debbie Gulick, Georgia Tech, Co-Organizer of INNOVATE 2005 conference on leadership, globalization and technology. The 2005 Conference took place in Singapore and Tokyo. The 2006 conference was held in Shanghai, China and Osaka, Japan.
- Yoshikazu Ikeda, Tokyo Institute of Technology 21st Century Center of Excellence for Photonics Nanodevice Engineering. Co-Organizer of INNOVATE 2005 and 2006 conferences on leadership, globalization and technology. The 2005 Conference took place in Singapore and Tokyo. Invited by Ikeda to be a Visiting Lecturer in July 2005 at the Tokyo Institute of Technology with the goal of helping Japanese engineering students gain better skills in professional English communication.
- Chris Dick, Xilinx, Collaborator on FPGA implementations of wireless baseband architectures. Co-author on several papers.
- Frank Tittel, Collaborator on the development of DSP-based platforms for trace gas sensing. Co-author on several papers.