Curriculum Vitae

Assist. Prof. Piya Kovintavewat, Ph.D.

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Objective	A lecturer/researcher in digital signal processing and telecommunications areas, as applied to digital data storage systems.

Education

Jan'00 – Dec'04	**Georgia Institute of Technology**, Atlanta, Georgia, USA. Ph.D. in Electrical Engineering
Sept'97 – Nov'98	**Chalmers University of Technology**, Göteborg, Sweden. M.Sc. in Digital Communication Systems and Technology
May'90 – Mar'94	**Thammasat University**, Bangkok, Thailand. B.Eng. in Electrical Engineering

Work Experiences

Jan'05 – present	**Lecturer/Researcher**, Nakhon Pathom Rajabhat University, Thailand
Jan'01 – Dec'04	**Graduate Research Assistant**, Georgia Tech, Atlanta, USA. • Designed and investigated efficient timing recovery schemes, as applied to digital data storage systems.
May'04 – Aug'04	**Technical Intern**, Seagate Technology, Pittsburgh, USA. • Developed reduced-complexity per-survivor iterative timing recovery for coded partial response channels. • Incorporated a pattern-dependent noise-predictive technique in the proposed timing recovery scheme to handle media noise dominated channels.
May'02 – Aug'02	**Technical Intern**, Seagate Technology, Pittsburgh, USA. • Investigated and analyzed the performance of oversampled timing recovery operating at twice the symbol-rate sampling. • Developed new timing recovery schemes based on per-survivor processing technique.
May'01 – Aug'01	**Technical Intern**, Seagate Technology, Pittsburgh, USA. • Designed a GPR target and an interpolated timing recovery (ITR) system for perpendicular recording. • Evaluated and tested the performance of the GPR target and ITR.
Dec'98 – Dec'99	**Research Assistant,** Network Technology Laboratory National Electronics and Computer Technology Center, Thailand**.** • Managed two projects, namely, Public-Key Infrastructure and Thailand Smart Card Standard projects.
Apr'94 – Aug'97	**Senior Engineer**, Area Coordination and Improvement Planning Division Thai Telephone and Telecommunication Public Company Limited. Thailand. • Responsible for installing and managing line test systems, analyzing the fault statistics, and supporting area telecommunication business activities.

Publication: JOURNAL

1) **P. Kovintavewat** and S. Koonkarnkhai, "Thermal Asperity Suppression Based on Least Squares Fitting in Perpendicular Magnetic Recording Systems," Journal of Applied Physics, vol. 105, no. 7, 07C114, March 2009.   (Impact factor = 2.171, 2007)

2) สันติ กูลการขาย และ **ปิยะ โควินท์ทวีวัฒน์**, "การเปรียบเทียบประสิทธิภาพของเทคนิคการปรับเส้นโค้งที่เหมาะสมสำหรับการระงับความขรุขระเชิงความร้อนในช่องสัญญาณการบันทึกแบบแนวตั้ง," *วารสารวิชาการเนคเทค*, ปีที่ 8, ฉบับที่ 20, เดือนกรกฎาคม – ตุลาคม 2551, หน้า 79 – 86.

3) C. Warisarn, **P. Kovintavewat**, *et al.*, "An Infinite Impulse Response Equalizer for Magnetic Recording Channels," *KKU Research Journal*, Thailand, vol.13, no. 4, pp. 521 – 525, May 2008.

4) **P. Kovintavewat**, "Robustness of per-survivor iterative timing recovery against pattern-dependent noise in perpendicular recording channels," *Trans. on ECTI-EEC*, Thailand, vol. 5, no. 2, pp. 251 – 254, August 2007.

5) **P. Kovintavewat**, I. Ozgunes, E. M. Kurtas, J. R. Barry, S. W. McLaughlin, "Generalized Partial Response Targets for Perpendicular Recording with Jitter Noise," *IEEE Trans. on Magnetics*, vol. 38, no. 5, pp. 2340 - 2342, September 2002.

Publication: CONFERENCE

1) S. Thamakam, **P. Kovintavewat**, *et al.*, "Characterization of Thermal Response Induced by Head/Disk Interaction in Current TGMR Head," to appear in *DST-CON 2009*, Thailand.

2) **P. Kovintavewat** and S. Koonkarnkhai, "A New Thermal Asperity Detection and Correction Algorithm for Perpendicular Recording Channels," to appear in *DST-CON 200*9, Thailand.

3) **P. Kovintavewat,** C. Warisarn, and P. Supnithi, "Bi-Directional Timing Recovery for Perpendicular Magnatic Recording Channels," to appear in *DST-CON 2009*, Thailand.

4) S. Koonkarnkhai, **P. Kovintavewat**, and P. Keeratiwintakorn, "The Effect of Bandpass Filters for Thermal Asperity Suppression in Perpendicular Recording Systems," in *Proc. of* ECTI-CON 2009, Pattaya, Thailand, to be published.

5) **P. Kovintavewat**, S. Koonkarnkhai, and S. Thamakam, "A Novel Thermal Asperity Suppression for Perpendicular Recording Channels," *IEEE International Conference on Magnetics* (INTERMAG 2009), to be published.

6) S. Makwimanloy, **P. Kovintavewat**, *et al.*, "A Novel Anti-Collision Algorithm for High-Density RFID Tags," in *Proc. of* ECTI-CON 2009, Pattaya, Thailand, to be published.

7) สันติ กูลการขาย และ **ปิยะ โควินท์ทวีวัฒน์**, "การระงับความขรุขระเชิงความร้อนแบบที่ถูกปรับปรุงในช่องสัญญาณการบันทึกแบบแนวตั้ง," *การประชุมวิชาการทางวิศวกรรมไฟฟ้า ครั้งที่ 31*, นครนายก, ฉบับที่ 2, 29 – 31 ตุลาคม 2008, CM-05, หน้า 665 – 668.

8) **P. Kovintavewat** and S. Koonkarnkhai, "Thermal Asperity Suppression Based on Least Squares Fitting in Perpendicular Magnetic Recording Systems," in *Proc. of The 53rd Annual Conference on Magnetism and Magnetic* Materials (Abstracts), Austin, Texas, pp. 211 – 212, November 10 -14, 2008.

9) **P. Kovintavewat**, C. Warisarn, and P. Supnithi, "An MMSE Infinite Impulse Response Equalizer for Perpendicular Recording Channels with Jitter Noise," in *Prof. of ITC-CSCC 2008*, Shimonoseki City, Japan, pp. 929 – 932, July 6 – 9, 2008.

10) S. Mukviboonchai, **P. Kovintavewat**, D. Thammasiri, "The Conceptual Framework for the Development of Thailand Economic Animal Traceability System," in *Proc. of* ECTI-CON 2008, Krabi, Thailand, vol. I, pp. 201 – 204, May 14 – 16, 2008.

11) S. Makwimanloy, **P. Kovintavewat**, *et al.*, "A New Anti-Collision Based on A-Priori Information," in *Proc. of* ECTI-CON 2008, Krabi, Thailand, vol. II, pp. 733 – 736, May 14 – 16, 2008.

12) T. Nuamcherm, **P. Kovintavewat**, *et al.*, "An Improved Proof for RFID Tags," in *Proc. of* ECTI-CON 2008, Krabi, Thailand, vol. II, pp. 737 – 740, May 14 – 16, 2008.

13) C. Warisarn, **P. Kovintavewat**, *et al.*, "An Infinite Impulse Response Equalizer for Magnetic Recording Channels," in *Proc. of* DST-CON 2008, Miracle Grand Conventional Hotel, Bangkok, Thailand, p. 076, April 21 – 23, 2008.

14) **P. Kovintavewat**, "Timing recovery in magnetic recording channels," in *Proc. of ECTI-CON 2007*, ChaingRai, Thailand, pp. 561 – 564, May 9 – 12, 2007.

15) **P. Kovintavewat**, "Robustness of per-survivor iterative timing recovery against thermal asperity in perpendicular recording channels," in Proc. of ECTI-CON 2006, Ubon Ratchathani, Thailand, vol. I/II, pp. 239 – 242, May 10 – 13, 2006.

16) **P. Kovintavewat**, "Oversampled timing recovery for magnetic recording channels," in Proc. of ECTI-CON 2006, Ubon Ratchathani, Thailand, vol. I/II, pp. 235 – 238, May 10 – 13, 2006.

17) **P. Kovintavewat**, J. R. Barry, F. M. Erden, and E. M. Kurtas, "Robustness of per-survivor iterative timing recovery in perpendicular recording channels," IEEE International Conference on Magnetics (INTERMAG 2005), Nagoya, Japan, pp. 1613 – 1614, April 4 – 8, 2005.

18) **P. Kovintavewat**, J. R. Barry, F. M. Erden, and E. M. Kurtas, "Reduced-complexity per-survivor iterative timing recovery for coded partial response channels," IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2005), Philadelphia, USA, vol. 3, pp. iii/841 – iii/844, March 19 – 23, 2005.

19) **P. Kovintavewat** and J. R. Barry, "EXIT Chart Analysis for Iterative Timing Recovery," IEEE Global Telecommunications Conference (Globecom 2004), Texas, USA, vol. 4, pp. 2435 – 2439, Nov 29 – Dec 3, 2004.

20) **P. Kovintavewat**, J. R. Barry, F. M. Erden, and E. M. Kurtas, "Per-Survivor Iterative Timing Recovery for Coded Partial Response Channels," IEEE Global Telecommunications Conference (Globecom 2004), Texas, USA, vol. 4, pp. 2604 – 2608, Nov 29 – Dec 3, 2004.

21) **P. Kovintavewat**, J. R. Barry, F. M. Erden, and E. M. Kurtas, "Per-Survivor Timing Recovery for Uncoded Partial Response Channels," IEEE International Conference on Communications (ICC 2004), Paris, France, vol. 5, pp. 2715 – 2719, June 20 – 24, 2004.

22) **P. Kovintavewat**, F. M. Erden, E. M. Kurtas, and J. R. Barry, "A New Timing Recovery Architecture for Fast Convergence," *IEEE International Symposium on Circuits and Systems* (ISCAS2003), Bangkok, Thailand, vol. 2, pp. 13-16, May 25 - May 28, 2003.

23) **P. Kovintavewat**, F. M. Erden, E. M. Kurtas, and J. R. Barry, "Oversampled Timing Recovery for Magnetic Recording Channels," *IEEE International Conference on Magnetics* (INTERMAG2003), Boston, Massachusetts, USA, pp. DT-06, March 30 - April 3, 2003.

24) **P. Kovintavewat**, F. M. Erden, E. M. Kurtas, and J. R. Barry, "Employing Fractionally-Spaced Equalizers for Magnetic Recording Channels," *IEEE Joint North American Perpendicular Magnetic Recording Conference* (NAPMRC2003), Monterey, California, USA, pp. 43, January 6-8, 2003.

25) **P. Kovintavewat**, I. Ozgunes, E. M. Kurtas, J. R. Barry, S. W. McLaughlin, "Generalized Partial Response Targets for Perpendicular Recording," *IEEE International Conference on Magnetics* (INTERMAG2002), Amsterdam, Netherlands, pp. GP-03, April 28-May 2, 2002.

Thesis

1) **P. Kovintavewat**, *Timing Recovery Based on Per-Survivor Processing*. Ph.D. thesis, Georgia Institute of Technology, Georgia, USA, October 2004.

2) **P. Kovintavewat**, *Modeling the Impulse Response of an Office Room*. M.Sc. Thesis, Chalmers University of Technology, Göteborg, Sweden, November 1998.

Books

1) **ปิยะ โควินท์ทวีวัฒน์**, *สัญญาณและระบบ* (Signals and Systems), 2551. (กำลังจัดพิมพ์ จำนวน 566 หน้า)

2) **ปิยะ โควินท์ทวีวัฒน์**, *ระบบบ่งชี้อัตโนมัติด้วยคลื่นความถี่วิทยุ* (RFID System), ศูนย์เทคโนโลยีอิเล็กทรอนิกส์และคอมพิวเตอร์แห่งชาติ (เนคเทค), 2551. (กำลังจัดพิมพ์ จำนวน 358 หน้า)

3) **ปิยะ โควินท์ทวีวัฒน์**, *คู่มือโปรแกรมภาษา SCILAB สำหรับผู้เริ่มต้น* (ฉบับปรับปรุงใหม่), ศูนย์ผลิตตำราเรียน สถาบันเทคโนโลยีพระจอมเกล้าเจ้าพระนครเหนือ, 2551.

4) **ปิยะ โควินท์ทวีวัฒน์**, *การประมวลผลสัญญาณสำหรับการจัดเก็บข้อมูลดิจิทัล เล่ม 1: พื้นฐานช่องสัญญาณอ่าน-เขียน*, ศูนย์เทคโนโลยีอิเล็กทรอนิกส์และคอมพิวเตอร์แห่งชาติ (เนคเทค), 2550.

5) **ปิยะ โควินท์ทวีวัฒน์**, *การประมวลผลสัญญาณสำหรับการจัดเก็บข้อมูลดิจิทัล เล่ม 2: การออกแบบวงจรภาครับ*, ศูนย์เทคโนโลยีอิเล็กทรอนิกส์และคอมพิวเตอร์แห่งชาติ (เนคเทค), 2550.

6) B. Vasic and E. M. Kurtas, "Coding and Signal Processing for Recording Systems," Book Chapter: *Interpolated timing recovery*, CRC press, pp. 27-1 – 27-16, 2005.

Patent   **P. Kovintavewat**, J. R. Barry, F. M. Erden, and E. M. Kurtas, "Method and Apparatus for Providing Iterative Timing Recovery," invention disclosure filed by Seagate Technology, patent pending, September 2004.

Skills   Programming languages: C/C++, Java, Pascal, Matlab, HTML.
Operating Systems: Unix, MS-Dos, Windows 95/98/2000/ME/NT/XP.
Software Packages: Excel, Winword, Powerpoint, FrameMaker, LaTeX.

Honors   Thai government scholarship (2000-2004), Thailand.
Graduate research assistantship (2001-2004), Georgia Tech, USA.
STINT scholarship (1997-1998), Sweden.
Excellent graduate, ranked 2nd in class, Thammasat University, Thailand.

Languages   English (fluent), Thai (mother tongue)

Research Interests
- Timing recovery for baseband transmission
- Error-control coding
- Modulation coding
- Detection and equalization
- Iterative detection
- Smart card technology
- Public-key infrastructure
- Radio frequency identification (RFID) system

Relevant Courses
- Statistics Engineering
- Signals and Systems
- Principles of Communication
- Digital Communication
- Signal Processing for Digital Data Storage (Hard Disk Drive)
- Fundamental of hard disk drive technology
- Communication Theory
- Information Theory

- Advanced Digital Communication
- Coding Theory and Applications (Error Control Coding)
- Digital Radio Communication
- Digital Signal Processing
- Linear Systems and Controls
- Linear Algebra
- Linear Statistical Model

References   Upon requested