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OBJECTIVE

Pursuing a full-time position where I can participate in developing cutting-edge, next-generation video coding/transcoding and processing technologies.

EDUCATION BACKGROUND

University of British Columbia – Canada **Sep. 2004 – Present**

***UBC ranked 35th in the world on the Academic Ranking of World Universities in 2008**

Doctor of Philosophy in Electrical and Computer Engineering GPA: 89.7%

Tianjin University – Tianjin, China **Sep. 2001- Mar. 2004**

Master of Engineering in Electrical Engineering GPA: 86.1%

Tianjin University– Tianjin, China **Sep. 1997- Jun. 2001**

Bachelor of Engineering in Electrical Engineering GPA: 88.6%

Graduated with distinction — top 1% of student in faculty (around 150), Tianjin University

AREA OF EXPERTISE

- Video Coding/Transcoding
- Image/Video Processing
- Video Transmission
- 3D Video
- High Dynamic Range Video

RELEVANT EXPERIENCE

Research Assistant

Digital Multimedia Lab – University of British Columbia, Canada **Sep. 2004 - Present**

- Developed computationally efficient techniques on H.264/AVC video transcoding applications.
  - Proposed an efficient distortion compensation scheme for the transform-domain video transcoding from MPEG-2 to H.264/AVC.
  - Built up a fast block size partitioning algorithm for the pixel-domain video transcoding from MPEG-2 to H.264/AVC.
  - Developed an efficient motion vector re-estimation scheme for the H.264/AVC down-sizing video transcoding applications.
  - Built a functional transcoding software platform in C.
  - Published 2 journal papers and 7 conferences papers.
- Implemented a brand new H.263 baseline encoder/decoder for QUALCOMM in C within a month.
- Developed a motion-vector correction MPEG-4 transcoder for a local company in C++ within a month.

Engineer Assistant

STMicroelectronics Beijing R&D Centre – China **Apr. 2004 – Jun. 2004**

- Participated in the Leadership Development Program. Involved in several short-term projects in several groups, related to Sales & Marketing, VoIP, and set-top-box development.

Research Assistant

Multimedia Processing Lab – Tianjin University, China **Sep. 2001 – Mar. 2004**

- Developed innovative techniques for the MPEG-2 to MPEG-4 transcoding applications, which were tested on the transcoding platform built by myself.
- Designed and implemented testing patterns for SDTV / HDTV which were adopted as parts of test patterns for Chinese National Standard.
- Built up a H.263 multi-channel supporting baseline decoder in C, which was bought by Tianjin Information Port Intelligent Technology Co., Ltd

TEACHING ASSISTANT

University of British Columbia – Canada **May 2005 – Aug. 2005**

Course name: EECE 466 – Digital Signal Processing.

Duties: Marking, Giving tutorials, meeting with students upon request.

University of British Columbia – Canada **Jan. 2007 – Apr. 2007 / Jan. 2008 – Apr. 2008**

Course name: EECE 541 – Multimedia Systems

Duties: Supervising one of the course projects – H.264/AVC Logo Insertion Transcoding.

PRESENTATIONS

Oral Presentations

- Invited presentation on digital video transcoding, Ecole Polytechnique Fédérale de Lausanne (*EPFL*), Lausanne, Switzerland, Oct. 2009.
- Conference presentation for IEEE International Conference on Image Processing (*ICIP*), Cairo, Egypt, Nov. 2009.
- Conference presentation for IEEE International Symposium on Wireless Pervasive Computing (*ISWPC*), Santorini, Greece, Apr. 2007.
- Conference presentation for IEEE Symposium on Signal Processing and Information Technology (*ISSPIT*), Vancouver, Aug. 2006.

Poster Presentations

- Conference presentation for International Conference on Acoustic, Speech, and Signal Processing (*ICASSP*), Las Vegas, U.S.A., Apr. 2008
- Conference presentation for *ICASSP*, Honolulu, U.S.A., Apr. 2007
- Conference presentation for *ICIP*, Atlanta, U.S.A., Oct. 2006.

TECHNICAL SKILLS

Language	C, C++, Matlab, Python, HTML, Object C
IDE	Visual Studio, Xcode
Framework	MFC, Cocoa Touch
Website Creation	ASP, PHP, CSS, CMS (Drupal)
Version Control Systems	SVN, CVS
Operating System	Windows, Linux, Macintosh
Modeling Language	UML

RECENT PUBLICATIONS

Journals

- Q. Tang, P. Nasiopoulos, "**Efficient Motion Re-Estimation with Rate-Distortion Optimization for MPEG-2 to H.264/AVC Transcoding,**" *IEEE Trans. Circuits Syst. Video. Technol.*, in press.
- Q. Tang, P. Nasiopoulos and R. Ward, "**Compensation of Re-quantization and Interpolation Errors in MPEG-2 to H.264 Transcoding**," *IEEE Trans. Circuits Syst. Video. Technol.*, vol. 18, pp.314-325, March 2008.

Conference Proceedings

- Q. Tang, P. Nasiopoulos, R. Ward, "**Fast Block-Size Partitioning Using Empirical Rate-Distortion Models for MPEG-2 to H.264/AVC Transcoding,**" *IEEE Int. Sym. Circuits Syst*. Paris, May 2010, Accepted.
- Q. Tang, P. Nasiopoulos, R. Ward, "**Efficient Motion Vector Re-Estimation for MPEG-2 to H.264/AVC Transcoding with Arbitrary Down-Sizing Ratios**," in Proc. *IEEE Int. Conf. Image Processing,* Cairo, November 2009, pp. 3689-3692..
- Q. Tang, H. Mansour, P. Nasiopoulos, "**Bit-Rate Estimation for Bit-Rate Reduction H.264/AVC Video Transcoding in Wireless Networks**," in Proc. *IEEE Int. Sym. Wireless Pervasive Computing, Santorini,* May 2008, pp.464-467.
- Q. Tang, P. Nasiopoulos, R. Ward, "**Fast Block Size Prediction for MPEG-2 TO H.264/AVC Transcoding**," in Proc. *IEEE Int. Conf. Acoust. Speech Signal Processing,* Las Vegas, April 2008, pp.1029-1032.
- Q. Tang, P. Nasiopoulos and R. Ward, "**Efficient Chrominance Compensation for MPEG-2 to H.264 Transcoding**," in Proc. *IEEE Int. Conf. Acoust. Speech Signal Processing,* Honolulu, April 2007, pp. I.1129-I.1132.
- Q. Tang, R. Ward, P. Nasiopoulos, "**An Efficient MPEG-2 to H.264/AVC Half-Pixel Motion Compensation Transcoding**," in Proc. *IEEE Int. Conf. Image Processing, Atlanta, October 2006,* pp. 865-868.
- Q. Tang, P. Nasiopoulos, R. Ward, "**An Efficient Re-quantization Error Compensation for MPEG-2 to H.264 Transcoding**" in Proc. *IEEE Int. Sym. Signal Process. Inform. Technology,* Vancouver, August 2006, pp. 530-535.

AFFILIATIONS

- Institute of Electrical and Electronics Engineers (IEEE), Student Member since 2005
- Member of Standards Council of Canada committee on MPEG development (ISO/IEC JTC1/SC29) since 2005

CERTIFICATES

- *Build a Better Understanding of the ISO*, issued by Standards Council of Canada

INTERESTS

- Badminton, Website creating, Swimming, Guitar playing, Movies.

References will be provided upon request