

Seon Joo Kim

School

Department of Computer Science
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RESEARCH INTEREST

Computer Vision / Image Analysis / Computational Photography

Radiometric calibration, high dynamic range imaging, tracking, image appearance / color, 3D reconstruction, biometrics

EDUCATION

Pursuing Ph.D., Computer Science

University of North Carolina at Chapel Hill, Chapel Hill, NC

Current

Master of Science, Electrical & Electronic Engineering

Yonsei University, Seoul, Korea

February 2001

THESIS - Robust Postprocessing Algorithm for Minutiae Extraction in Fingerprint Images

Bachelor of Science, Electronics Engineering

Yonsei University, Seoul, Korea

February 1997

WORK EXPERIENCE

GE Global Research Center

Niskayuna, NY

May - August 2005

Summer Intern

- Developed a new algorithm for active object tracking using a PTZ camera

Cortex Surveillance Automation (<http://www.cortex.us>)

Durham, NC

May - August 2004

Summer Intern

- Developed tracking system for visual surveillance system (EClips)

University of North Carolina

Chapel Hill, NC

August 2002 - Current

Research Assistant for Prof. Marc Pollefeys

- Developed a new algorithm for estimating camera response functions.
- Developed a new algorithm for anti-vignetting for high dynamic range image and image mosaics.
- Developed a new algorithm for joint feature tracking and radiometric calibration.
- Currently working on radiometric calibration for multiple cameras and images from commodity photo collections.

Signal Processing Center, Yonsei University

Seoul, Korea

March 2001 - May 2002

Research Assistant

- Developed multi-modal biometric system using fingerprint and signature recognition
- Developed fingerprint recognition system

Yonsei University
Seoul, Korea

- Developed a new algorithm for feature postprocessing and core point extraction for fingerprint recognition.

March 1999 - February 2001
Research Assistant for Prof. Jaihie Kim

Rep. of Korea & United States Combined Forces Command
Seoul, Korea

- Translation of official documents, Interpretation

March 1997 - March 1999
English Specialist

Samsung Motors
Suwon, Korea

- Participated in Navigation System Research

July - August 1995
Summer Intern

TEACHING

COMP 110 (Introduction to Programming) : Plan/Teaching/Grading of the course for 33 students
(<http://cs.unc.edu/~sjkim/comp110.html>)

PUBLICATIONS

Journals

S. J. Kim and M. Pollefeys, "Robust Radiometric Calibration and Vignetting Correction", IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), Vol. 30, No. 4, April, 2008

M. Pollefeys, D. Nister, J.-M. Frahm, A. Akbarzadeh, P. Mordohai, B. Clipp, C. Engels, D. Gallup, S. J. Kim, P. Merrell, C. Salmi, S. Sinha, B. Talton, L. Wang, Q. Yang, H. Stewenius, R. Yang, G. Welch, H. Towles, Detailed Real-Time Urban 3D Reconstruction From Video, International Journal of Computer Vision (IJCV) special issue on Modeling Large-Scale 3D Scenes

Conferences

Seon Joo Kim, Jan-Michael Frahm, and Marc Pollefeys, "Radiometric Calibration with Illumination Change for Outdoor Scene Analysis, Accepted, CVPR '08

Seon Joo Kim, Jan-Michael Frahm, and Marc Pollefeys, "Joint Feature Tracking and Radiometric Calibration from Auto-Exposure Video", Proc. Int. Conf. on Computer Vision (ICCV), 2007

S. J. Kim, D. Gallup, J.-M. Frahm, A. Akbarzadeh, Q. Yang, R. Yang, D. Nistr, M. Pollefeys, "Gain Adaptive Real-Time Stereo Streaming", Proc. Int. Conf. on Computer Vision Systems, 2007

S. J. Kim and M. Pollefeys, "Radiometric Alignment of Image Sequences", Proc. of IEEE Conf. on Computer Vision and Pattern Recognition, 2004

S. Sinha, M. Pollefeys, S. J. Kim "High-Resolution Multiscale Panoramic Mosaics from Pan-Tilt-Zoom Cameras", 4th Indian Conference on Computer Vision, Graphics and Image Processing, 2004

S. J. Kim, D. Lee, and J. Kim, "Algorithm for Detection and Elimination of False Minutiae in Fingerprint Images", Proc. of the Third Conference on Audio- and Video-Based Biometric Person Authentication, 2001

S. J. Kim and J. Kim, "A Study on Fingerprint Corepoint Detection", Proc. Institute of Electronics Engineers of Korea Summer Conference, Vol.4, pp.238-241, 2000

COMPUTING SKILLS

Computer Languages : C, C++, Visual C++, Java
Computer Vision/Graphics related libraries : OpenCV, VXL, OpenGL
OS : Windows, Unix, Linux

HONORS

Ministry of Information and Communication(Republic of Korea) Scholarship, 2002
Graduate School Dean Scholarship, Yonsei University, 1999
The Army Achievement Medal by the Secretary of the Army, USA, 1999