Matthias Grundmann

Ph.D. Student

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Objective

Pursue a Ph.D. in Computer Vision to develop new technologies that change the way users perceive and utilize videos and images.

Education

Ph.D. Student in Computer Science — since August 2008
Advisor: Professor Irfan Essa

Master's Studies in Mathematics — since January 2010

Master's Studies in Computer Science — August 2006
Thesis: Real-Time Content-Aware Resizing of Video — December 2008
GPA 4.0
Georgia Institute of Technology, Atlanta, GA

Dual Pre-Degree in — November 2005

Computer Science	German GPA 1.5
Mathematics	German GPA 1.6
top 5% of students	

Technical University of Munich, Germany

High School Diploma with GPA 1.0 - Valedictorian — June 2002
Wilhelm-von-Humboldt, Rostock, Germany
Subjects: Mathematics, Physics and Social Studies

Research Experience

Graduate Research Assistant with Professor Irfan Essa — August 2006 - present
Georgia Institute of Technology, Atlanta, GA

Internship at Disney Research supervised by — January 2009 - August 2009
Irfan Essa, Arik Shamir and Jessica Hodgins
Disney Research, Pittsburgh, PA

Internship at Google Research Vision Group — May 2008 - August 2008
supervised by Vivek Kwatra and Mei Han
Google Inc., Mountain View, CA

Research Assistant with Professor Nassir Navab — January 2006 - August 2006
Technical University of Munich, Germany

Publications

M. Grundmann, V. Kwatra, M. Han, I. Essa
Efficient Hierarchical Graph-Based Video Segmentation
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
San Francisco, USA, June 2010

M. Grundmann, V. Kwatra, M. Han, I. Essa
Discontinuous Seam-Carving for Video Retargeting
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
San Francisco, USA, June 2010

K. Kim, M. Grundmann, A. Shamir, I. Matthews, J. Hodgins, I. Essa
Motion Fields to Predict Play Evolution in Dynamic Sport Scenes
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
San Francisco, USA, June 2010

R. Hamid, R. Kumar, M. Grundmann, K. Kim, I. Essa, J. Hodgins
Player Localization Using Multiple Static Cameras for Sports Visualization
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
San Francisco, USA, June 2010

M. Grundmann, F. Meier and I. Essa
3D Shape Context and Distance Transform for Action Recognition *(oral)*
International Conference on Pattern Recognition (ICPR), Tampa, FL, December 2008

S. Benhimane, H. Najafi, M. Grundmann, E. Malis, Y. Genc, N. Navab
Real-time object detection and tracking for industrial applications *(oral)*
International Conference on Computer Vision Theory and Applications (VISAPP),
Funchal, Portugal, January 2008

Patents

2 pending

Achievements

Oustanding Poster Presentation Award *($2000 grant)* February 2010
Efficient Hierarchical Graph-Based Video Segmentation
- Research competition, 300+ Ph.D. students -
Georgia Tech Research and Innovation Conference, Atlanta, GA

Best project award in Machine Learning class May 2007
Instructor: Charles Isbell
Georgia Institute of Technology, Atlanta, GA

Ranked first in Computer Animation class December 2006
Instructor: Jarek Rossignac
Georgia Institute of Technology, Atlanta, GA

Best group in lab course 3D Computer Vision August 2006
Instructor: Nassir Navab
Technical University of Munich, Germany

Fellowships / Grants

Graduate Research Assistantship — August 2006 - present
Georgia Institute of Technology

$2000 Travel Grant — February 2010
Georgia Institute of Technology

Abroad Study Grant — October 2006
Technical University of Munich, Germany

Support Program "Pearls of Computer Science" for excellent students — October 2003 - August 2005
Technical University of Munich, Germany

Programming Skills

Programming Languages
C++, Matlab, Python, Objective-C, Java

Libraries
IPP, OpenCV, LAPACK, OpenMP, OpenGL, Qt, Boost, Proto Buffers, iPhone SDK

Accreditation

Teaching Assistant Linear Algebra — October 2005 - February 2006
Technical University of Munich, Germany

Participation in three college classes during high school
Topics: Groups and Fields, Graph Theory and CG

Blackberry development
Design and implementation of dynamic web-pages

Languages

English
German
French (basics)

Volunteer Experience

Developed real-time updated Google Earth Layer used by US Marines (USS Bataan) to coordinate help during 2010 Haiti Earthquake — January 2010

High School Student Teacher for "Game programming with C++" — November 2001 - February 2002

Teenage Guidance Counselor during a bike-canoe-tour in Sweden organized by the Protestant Church — July 2001