

HWA-CHOW OLIVER HSU

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EDUCATION

Swarthmore College, Swarthmore, PA, 1999 – 2003.

Bachelor of Arts, June 2003. Major in Computer Science, Minor in Music. GPA: 3.84 (4.0 Scale). Recipient of Cornelia Chapman & Nicholas O. Pittenger Scholarship, Edwin B. Garrigues Scholarship. Sigma Xi Society. Phi Beta Kappa Society.

Wissahickon High School, Ambler, PA, 1997 – 1999.

GRG1 Stubenbastei, Vienna, Austria, 1991 – 1997.

WORK EXPERIENCE

Research Assistant, GRASP Lab, University of Pennsylvania. (Summer 2003 – Summer 2004, Summers 2005 & 2006).

Co-developer of ROCI, a modular distributed computing application platform built on the Microsoft .NET Framework used with MARS (Multiple Autonomous Robots) and other research projects in the GRASP lab. Implemented a flexible and extensible communications framework to facilitate cross-platform communication via a variety of network protocols with emphasis on robustness and recovery from communications failure. Implemented a graphical user interface module for ROCI for use in the MARS project to efficiently manage a team of autonomous ground- and air-based robots and display collected sensor and status information in real-time. Developed fast implementation of image processing routines using native C and MMX intrinsics for real-time video analysis. Co-author of several published papers on distributed computing and the ROCI platform. Set up and maintained a CVS repository on project server. Wrote UNIX shell scripts to automatically perform maintenance whenever repository was modified. Provided hardware and software maintenance on lab computers.

Research Project with Dr. Bruce Maxwell, Dept. of Engineering, Swarthmore College. (Spring 2003).

Researched various existing methods of face detection in imagery and used findings to implement a real-time face detection system for use on the robot GRACE, a joint project by Carnegie Mellon University, the Naval Research Laboratory, Metrica Inc., Northwestern University, and Swarthmore College.

Research Assistant for Dr. Bruce Maxwell, Dept. of Engineering, Swarthmore College. (Summer 2002).

Area of research: computer vision. Collaborated with two other assistants to develop intuitive graphical application to evaluate current image segmentation methods and collect new data to be used towards developing new segmentation techniques. Software subsequently used by a student for thesis research. Designed poster and gave informal presentation to faculty and peers.

Area of research: robotics. Contributed to Swarthmore's entries to the 2002 AAI robot competition by implementing a motion detection algorithm and developing a graphical user interface to control two robots simultaneously. Co-author of a paper on the robots' software architecture published in the 2002 AAI Workshop Technical Report.

Research Assistant for Dr. Paul Rablen, Dept. of Chemistry, Swarthmore College. (Summer & Fall 2001).

Researched and implemented methods of improving QSAR, a technique for predicting chemical activity of potential drugs with Artificial Neural Networks. Analyzed and modified/expanded existing code. Gave formal presentation to faculty, peers, and parents on the project.

SKILLS AND INTERESTS

Programming: C, C++, C#, MS .NET, XML/XSTL, Java, Perl, HTML, JavaScript, PHP, ASP, SQL, Motif, UNIX shell

Other Computer Skills: MS Windows 9x/Me/NT/2000/XP, Linux/UNIX, MS Office, Maya

Foreign Languages: Fluent in Chinese, Taiwanese and German. Studied Russian for 6 years.

Music: Studied cello for 20 years, piano for 8 years. Currently pursuing Master of Music in Cello performance and Music Theory at Mannes College of Music, New York, NY. Member of cello Faculty of Bryn Mawr Conservatory (Bryn Mawr, PA) since 2003. Co-Winner of 2002 Swarthmore College Concerto Competition, performed Dvorak Cello Concerto with Swarthmore College orchestra in December 2002. Performed Beethoven Triple Concerto with Swarthmore College orchestra in December 2004. Member of Philadelphia Youth Orchestra for 3 years, tour to China Summer 2002.

Sports: Regular participation in intramural soccer and basketball leagues at Swarthmore College. Member of winning intramural soccer team in fall 2000, 2001, and 2002, captain of team in fall 2002 and spring 2003. Also enjoy snowboarding and table tennis.

Volunteering: Perform music at Sloan-Kettering hospital for patients and visitors (Spring 2007 - Present). Tutored staff workers employed at Swarthmore College (Spring 2002). Tutored Chinese immigrants in Philadelphia Chinatown (Spring 2000 – Spring 2001).