
EDUCATION

Washington University in St. Louis

St Louis, MO

Candidate for Ph.D. *in Computer Science*, May 2010 (expected)

2006 - 2010

- **Research Focus:** Computer graphics and bio-medical imaging
- **Proposed Thesis:** Computational tools for protein structure prediction from intermediate resolution density volumes
- **Product:** Gorgon – An interactive molecular modeling system

M.Sc. *in Computer Science*, May 2007

2005 - 2007

- **Thesis:** Determining α -helix correspondence for protein structure prediction from Cryo-EM density maps
- **GPA:** 4.0

Manchester Metropolitan University

Manchester, UK

B.Sc. (Honors) *in Information Systems*, September 2004

1999 - 2004

- Awarded the Gold Medal for excellence
- Ranked #1 (in a class of 220)
- First class honors (*summa cum laude*)
- **Thesis:** Three-dimensional motion tracking using stereo vision

EXPERIENCE

Washington University in St. Louis

St. Louis, MO

Graduate Research Assistant

2006 - Present

- **Research:** Investigated the development of computational tools for understanding bio-medical images by analyzing their geometric properties.
- **Development:** Developed Gorgon, an interactive molecular modeling system for large macromolecular complexes imaged using electron cryo-microscopy (cryo-EM).
- **Publication and Presentation:** Published and presented research results at top journals and conferences, such as the Visual Computer, Computer Aided Design, ACM Siggraph, etc.
- **Collaboration:** Collaborated with researchers in the areas of Computer Graphics, Computer Vision, Computational Geometry, Structural Biology and Bio-Medical Imaging.

IFS Research and Development

Colombo, Sri Lanka

Headquartered in Sweden with a presence in 54 countries, IFS is among the world's leading providers of lifecycle management and ERP software. Their largest R&D office is located in Colombo and is the base for its research operations.

Linköping, Sweden

Oslo, Norway

1999 - 2005

Framework Architect

2004 - 2005

- **Innovation:** Pioneered the use of cutting-edge HCI techniques in business software, effectively increasing the user experience by orders of magnitude.
- **Framework Design:** Designed and developed a storage independent ERP framework.

Technical Coordinator

2003 - 2004

- **Product Development:** Administered the integration of R&D discoveries into the core products, ensuring their effectiveness, efficiency and long-term maintainability.
- **Personnel Development:** Championed interest groups, provided internal consultation and conducted employee training sessions to increase technology awareness.

- Team Leader** 2002 - 2003
- **Leadership:** Lead the team that integrated repair-order functionality into the IFS Supply-Chain-Management solution, which was released with a record-low bug count of zero.
 - **Project Management:** Analyzed business requirements and performed resource allocation, project planning, scheduling and risk mitigation for the above project.
- Senior Software Engineer** 2001 - 2002
- **System Design:** Designed a solution for business-to-business electronic data interchange using the AECMA protocol for British Aerospace (BAE Systems).
 - **Customer Collaboration:** Collaborated with representatives from BAE Systems and testers from six countries to perform a satisfactory system test and release of the above solution.
- Software Engineer** 1999 - 2001
- **Teamwork:** A member of the teams which incorporated US corporate tax support to the IFS financial solution, and developed a system to ensure precise accounting and currency conversion for European IFS customers during the introduction of the Euro.

Informatics Institute of Technology (IIT) Colombo, Sri Lanka

As Sri Lanka's largest private university, IIT provides higher education in collaboration with University of London, Manchester Metropolitan University, University of Westminster and Keele University. 2004 - 2005

Lecturer

- **Teaching:** Taught Data Engineering to a class of 96 college seniors.
- **Evaluation:** Performed student assessments by means of examinations and assignments.

Information and Communication Technology Agency of Sri Lanka (ICTA) Colombo, Sri Lanka

The ICTA is responsible for the utilization and deployment of Information Technology within Sri Lanka. It also focuses on IT education and training of national teams for the International Olympiad in Informatics. 2001 - 2005

Team Trainer

- **Coaching:** Trained the Sri Lankan national teams which won two gold medals, two silver medals and seven bronze medals at the International Olympiad in Informatics.

PUBLICATIONS

Refereed Journal Publications

- Abeyasinghe S.S., Ju T., "Interactive skeletonization of intensity volumes", *The Visual Computer*, 25 (5-7), 627-635, 2009. 2009
- Abeyasinghe S.S., Ju T., Baker M., Chiu W., "Shape modeling and matching in identifying 3D protein structures", *Computer Aided Design*, 40(6), 708-720 2008

Peer-Reviewed Conference Publications

- Abeyasinghe S.S., Ju T., "Interactive skeletonization of intensity volumes", *Proceedings of the 2009 Computer Graphics International Conference*, 627-635 2009
- Abeyasinghe S.S., Baker M., Chiu W., Ju T., "Segmentation-free skeletonization of grayscale volumes for shape understanding", *Proceedings of the IEEE International conference on Shape Modeling and Applications*, 63-71 2008
- Abeyasinghe S.S., Ju T., Baker M., Chiu W., "Shape modeling and matching in identifying protein structure from low-resolution images", *Proceedings of the 2007 ACM symposium on Solid and physical modeling*, 223-232 2007
- Abeyasinghe S.S., Krishanthan L., "Motrack3D: Three-Dimensional motion tracking using stereo vision", *Proceedings of the 11th annual sessions of the IEE - Sri Lanka* 2004

Peer-Reviewed Abstracts

- Abeysinghe S.S., Ju T., "Interactive segmentation-free skeletonization of grayscale volumes", *ACM SIGGRAPH 2008 Posters*, 84-84 2008
- Ly P, Liu L, Abeysinghe S.S., Ju T., Grimm C.M., "Surface reconstruction from point set using projection operator", *ACM SIGGRAPH 2008 Posters*, 1-1 2008
- Abeysinghe S.S., Ju T., "Shape-preserving gray-scale skeletonization on 3D density maps", *ACM SIGGRAPH 2007 Posters*, 20-20 2007

Thesis

- Abeysinghe S.S., "Determining α -helix correspondence for protein structure prediction from cryo-EM density maps", *Master's Thesis, Washington University in St. Louis* 2007
- Abeysinghe S.S., "MoTrack3D: Three dimensional motion tracking using stereo vision", *Undergraduate thesis, Manchester Metropolitan University* 2004

FURTHER INFORMATION

Awards

- Gold Award at the National Best Quality Software Awards. 2004
- Gamini Wickramasinghe Award (Gold Medal) for excellence. 2004
- Academic Excellence award for Best Final Year Project. 2004
- Weerawagu Memorial Prize for Computer Studies. 2002
- Gold Award at the Sri Lanka National Informatics Olympiad. 1998
- Dr. Anandatissa de Alwis Challenge Trophy for the most outstanding student. 1995

Achievements

- Represented Sri Lanka at the Asia Pacific Information and Communications Technology Awards. 2004
- Official Judge for the South East Asian Regional Computer Confederation Competition (SEARCC). 2003
- Represented Sri Lanka at the International Olympiad in Informatics (IOI). 1998 - 2000
- Captained the Sri Lankan Team that won 3rd place at the South East Asian Regional Computer Confederation Competition (SEARCC). 1997

Affiliations

- Member of ACM – Siggraph. 2007 - Present
- Member of IEEE – Computer Society. 2005 - Present
- Member of the IET (Formally known as the IEE). 2004-2006
- Member of the BCS. 2004-2006

Leadership Roles

- **Chief Organizer:** Cutting Edge 2004 exhibition, the largest exhibition of undergraduate student research projects in Sri Lanka to date 2004
- **President:** Undergraduate class of 2004 2003
- **Senior Prefect:** Royal College 1999
- **President:** Royal College Computer Society 1999
- **President:** Royal College Archaeological Society 1999
- **Editor:** Royal College Journal 1998
- **Editor:** The Royalist Magazine 1998
- **Captain:** Sri Lankan national team for the South East Asian Regional Computer Confederation Competition (SEARCC) 1997

Technical Competencies

- **Languages:** C/C++, C#, Python, Delphi, Pascal, VB, VB.net, Java, JSP, PHP, Scheme, SQL, PLSQL
- **Databases:** Oracle, MySQL, SQL Server
- **Scientific Computation:** Matlab, Mathematica
- **3D Modeling:** Maya, 3D Studio Max
- **Molecular Modeling:** Gorgon, UCSF Chimera, EMAN2