

Tejas Gajera

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EDUCATION

- Stevens Institute of Technology, USA** May '09
Master of Science in Computer Science
Thesis: Instrument Localization in Interventional Images
- Nirma University, Institute of Technology, India** July '07
Bachelor of Engineering in Information Technology
Thesis: Weft Distortion Detection in Fabrics

PROFESSIONAL EXPERIENCE

Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA Feb. '10–Present
Software Developer

- ◆ Responsible for the design and development of web-based medical imaging application for digital imaging in pathology which is an integrated platform for biomarker validation using near-infrared fluorescence and image fusion technology. The application is based on client/server model which is used to visualize microscopic slides at different resolutions (like Google maps) and also to generate ground truth for 'Automated Gleason Grading Algorithm' for automatic cancer diagnosis. Database (i.e. MySQL, Oracle 11g) is used to store the annotation geometry and information of cancer cells. Apache2.2, Apache Tomcat is used for client/server model.
- ◆ Responsible for the design and development of automated combinatorial synthesis application to find the tumor-specific ligands which helps to improve cancer diagnostics and therapeutics. The application comprised of six robotics workstations for the automated synthesis, screen, and identification of small molecules that binds with high affinity to the cancer cell surface. Application and RS-232 communication interface used for the development of automated simulation.
- ◆ Participate in the clinical trials at BIDMC and BW hospitals.

Siemens Corporate Research, Princeton, NJ July '09 – Jan. '10
Software Engineer

- ◆ Involved in development of plug-in and user interface for a medical imaging application (Image Guided Cardiac Ablation for Ventricular Tachycardia) based on RADBuilder platform using C++ and OpenInventor. This application performs segmentation of heart chambers from CT images. It also provides segmentation editing techniques which help to apply manual corrections to the segmentation output.
- ◆ Also involved in the development of unit test specification and design specification.

Siemens Corporate Research, Princeton, NJ May '08 – Dec. '08
Intern

- ◆ Involved in the development of an instrument localization plug-in for interventional images (i.e. Biplane X-Ray images) using C++, OpenGL and FOX toolkit.

Semitronik, Gandhinager Electronic Estate, India Jan. '07 – Jun. '07
Intern

- ◆ Designed and developed a standalone application to control fabric quality using MATLAB and C++. This application is based on an image and signal processing algorithms and it provides fast, efficient, accurate fabric quality control.

ACADEMIC EXPERIENCE

Image Picker Sept. '09

- ◆ Developed an application that provides functionalities to load any png/jpeg image and perform image manipulation operations like 2D/3D translation, 2D planned rotation, 3D rotation, zoom in, zoom out and free hand deformation.
- ◆ Qt4 library is used for GUI and OpenCV, OpenGL are used for image manipulation and texture mapping.

- Tracking** March '09
 ♦ Implemented an algorithm to track a human face and a ping pong ball using Histogram Intersection and Normalized Correlation from a series of images.
- Render a Virtual Scene with Shadowing using 2-pass Shadow Algorithm** April '08
 ♦ Developed an application that renders a virtual scene which is defined by multiple 3D objects. Keyboard shortcuts are used to change the view port and light source around the scene.
- Comparison of Different Image Segmentation Techniques** March '08
 ♦ Developed project report which consists of different segmentation techniques and comparison.
- Bezier Patches** March '08
 ♦ Developed a modeling application to view, rotate and manipulate Bezier patches in which patches are rendered as a wire frame or a smooth surface model. The camera and light sources can be changed.
- Animation of Robot** Feb. '08
 ♦ Developed a 3D animation application that animates a robot model that is defined using 6 moving components in a 3D environment. The robot walks on a bi-cubic path and the environment is created using multiple trees and other 3D objects. The view point of a camera can be rotated, translated, zoomed in/out and toggled in first-person and third-person modes.
- Ray Tracer Application** Jan. '08
 ♦ Developed a ray tracing application that renders a view of an object world that is defined using multiple 3D ellipsoids. The camera and light sources can be placed at user selected positions.

TECHNICAL SKILLS

Languages	C, C++, VC++, C#, JAVA, MATLAB, OpenGL
Toolkits/Libraries	OpenCV, Qt, STL, Open Inventor, MFC, FOX, OpenLayers, GDAL
Web Technologies	Java Script, Java Server Pages, HTML, DHTML, PHP, Apache, Apache Tomcat
Database Technologies	Oracle 11g, MySql
Application Tools	RAD/XIP Builder, CMake, Visual SourceSafe, Subversion, Clearcase, MS Office Suite

PUBLICATIONS

Invention Disclosure (Pending), "Image Segmentation Editing Techniques", Siemens, Research Corporation, NJ.