Preet Desai

email: preet.desai@gmail.com • **site**: http://preet.github.io • **code**: http://github.com/preet

Summary

- Actively looking for opportunities where I can work with a team focused on creating high quality software in a professional environment.

- Worked on software product ideas for the in-vehicle infotainment and the hobbyist car computer markets. Concentrated on creating user friendly applications for mapping, navigation and vehicle telemetry.

- Proficient at software development using C++. Experience developing tools, libraries and applications for projects in medical, automotive and GIS.

- Dependable self starter with experience collaborating with individuals from different backgrounds including researchers, physicians, lab technicians and engineers.

Project Experience

Modern GUI Application Framework   2014 - Current

- Wrote a C++ library to help create applications and libraries using event based programming. Included modules to provide platform event handling, OpenGL drawing and text rendering.

- Implemented a GUI library for building dynamic user interfaces geared towards embedded, mobile and kiosk applications. Provides reactive widgets that can be automatically updated using property bindings.

Vehicle Telemetry   May 2011 - Nov 2013

- Built software to communicate with OBD-II systems over an ELM327 interface for Linux and Android using C++ and JNI.

- Included the ability to dynamically build and parse complex vehicle messages with XML and JavaScript to support vehicle-specific parameters.

Map Rendering   Dec 2012 - Jan 2014

- Designed a library for rendering map data in 3d that can combine data from multiple sources to create a detailed environment using C++ and OpenSceneGraph.

- Added in extensive customization based on level of detail to define the look and feel of maps, improve user accessibility and control rendering overhead.

- Special attention was given to optimize performance for mobile graphics by minimizing overdraw and reducing draw calls through batching.

Professional Experience

Robarts Research Institute, London, Ontario   Sept 2009 - Dec 2009 / May 2010 - Aug 2010
Engineering Assistant

- Participated in a project for the design and development of a robotic system to perform minimally invasive cardiac surgery remotely.

- Built a modular software control system and UI for the robot to serve as a test bed to assess system requirements, improve ease of operation and allow for the use of multiple components. Development was done on Linux with C++ and Qt.

- Designed and evaluated ultrasonic motor controllers to achieve specific motion control requirements. Directly responsible for circuit design, simulation, prototyping and validation.

Sunnybrook Research Institute, Toronto, Ontario   May 2008 - Aug 2008 / Jan 2009 - Apr 2009
Imaging Research Assistant

- Built a framework for the visualization, implementation and evaluation of vascular registration techniques using C++ and Matlab.

- Worked with researchers and lab techs to obtain specific X-ray images of blood vessels during in-vivo animal research catheterization procedures.

- Developed OS X programs and Quartz Composer plugins to demonstrate real-time object tracking using a motion tracking camera.

Education

University of Waterloo, Waterloo, Ontario   Sept 2006 - Apr 2011
Bachelor of Applied Science, Mechatronics Engineering

National University of Singapore, Singpore   Jan 2010 - May 2010
Undergraduate Exchange Term (Engineering)