

Preet Desai

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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. Focused 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 over-draw and reducing draw calls through batching.

Professional Experience

Robarts Research Institute, London, Ontario
Engineering Assistant

Sept 2009 - Dec 2009 / May 2010 - Aug 2010

- 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
Imaging Research Assistant

May 2008 - Aug 2008 / Jan 2009 - Apr 2009

- 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
Bachelor of Applied Science, Mechatronics Engineering

Sept 2006 - Apr 2011

National University of Singapore, Singapore
Undergraduate Exchange Term (Engineering)

Jan 2010 - May 2010