Sagar Gandhi

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Summary

- Exception implementer of Machine Learning algorithms – Neural Networks, SVM, HMM and Deep Learning.
- Hands on experience in Computer Vision techniques and algorithms for Object detection, recognition.
- In-depth study of Human Computer Interaction – Human pose detection, gesture philosophy.
- Hands-on - C++, OpenCV, OpenGL and CUDA APIs.
- Excellent knowledge of SDLC lifecycle, Agile Scrum Methodologies, Creating and implementing solutions to complex problems.
- Excellent problem solving and analytical skills with ability to communicate to both technical and business users.
- Motivated, high energy candidate, good planning and organizational skills with ability to work in the team as well as independently.

Experience

Software Engineer **Persistent Systems, Pune, India** **Aug 2013 – Present**

Hands On Development

- Invented realtime Gesture Recognition Algorithm using Kinect for Windows, Patent application is pending.
- Created innovative domain oriented Gesture Library for Kinect for Windows. Worked as Lead programmer for gestures using C++. Patent application is in progress.
- Built foundation for Gesture Recognition using ANN, PCA, HMM and other Machine learning algorithms.
- Built apps using COM model and C++ for Kinect for Windows. For e.g. MS Powerpoint slides using simple gestures, Windows Media Player using completely hands-free gestures, MS Paint In-Air drawing.
- Collaborated with product design team to build Game using Intel 3D Camera (RealSense), C++, STL.
- Developed a Gesture based App for Speech Impaired people to convey a message using OpenCV on Windows 7, porting to Android is in Progress.

Hands-On and Improvements

- Debugged Intel On-Chip Graphics Driver for Windows XP using WinDbg debugger. Primarily worked on 3D HAL module utilizing C programming language.
- Developed 3D Game on Android platform using OpenGL ES, NDK and C++ to help children remember the number tables.
- Developed and improved rendering performance of Maximum Intensity Projection and Averaging ray-caster (Medical Imaging – Ray Tracing) using OpenGL, GLSL.
- Performed Unit and Integration testing of C++ modules and apps. Using checklist and peer review system reduced defects by 40%.
- Implemented core features for Gesture Recognition API. Achieved all development milestones and performed production deployments. Used Agile Scrum for development.

Software Engineer **Sterling System, Pune, India** **Jan 2013 – July 2013**

- Using C++, STL, OpenGL and OpenCV developed innovative Augmented Reality product targeting education industry.

- Developed Polygon Reduction Tool for reducing number of polygons by 50%-75% using C++ and OpenGL.
- Developed real time Image Processing program for Camera Captured Images using C++ for border detection.
- Using C++, OpenGL developed real-time image rendering program and performed Unit and Integration testing.
- Designed feature detection algorithms using Image Processing.
- Used .vol volumetric data file and OpenGL raycasting to render a model.

Independent Projects

- Engineered and programmed OpenGL-ES Game Engine for Android using C, C++, STL and NDK.
- Hands-on programming of high level shader languages - GLSL, on Desktop and Embedded platform. Created many demos to test hardware capabilities.
- Wrote GPU Profiler for AMD using C++ on Windows 7 to compute GPU statistics at runtime. Statistics include GPU core temperature, memory usage, etc.
- Built 3D Action Game for PC from initial design to deployment. Used Qt for Window Management.
- Wrote small file-system filter driver for Windows XP. Explored and experimented with WDM and WDK.
- Developed Namespace Extension program for Windows Explorer using COM to get a custom effect of viewing files and folders.
- Wrote Boot-loader in C and x86 Assembly.
- Built small plug and port file system for Unix like systems.

Certifications

1. Machine Learning from Stanford University
2. Image Processing from Duke University
3. Computational Photography from Georgia Institute of Technology
4. Parallel Programming – GPGPU from Nvidia

Skills

Languages: C, C++, Java, Python, COM, MFC, Assembly, Embedded-C, SQL, Android, Machine Learning

Libraries: STL, COM, OpenCV, OpenGL, OpenGL ES, Kinect for Windows, Intel RealSense, DirectX

Tools: Visual Studio, Eclipse, Matlab, Octave, SVN, git, WinDbg, Visual Studio Debugger, GDB, gcc, Blender, Photoshop, Dreamweaver

Methodologies: Scrum, Test Driven Development, SDLC, OOAD, Try-Early-Fail-Early

Platforms: Windows, Linux, Android

Core: OS, Kernel Development, Algorithms, Data Structures, Mathematics, Gesture Recognition, Embedded Programming, Computer Vision, Augmented Reality

Blogs

http://sagar-gandhi.me
http://inside-unix.blogspot.co.in

Education

Masters in Scientific Computing	2013	School of Scientific Computing University of Pune, India
Bachelor of Computer Science	2010	University of Pune, India