Senior Software Engineer Senior Software Engineer Senior Software Engineer Fairfield, IA Work Experience Senior Software Engineer LEXI CORPORATION 2007 to 2012 Software Engineer (2005 - 2007) Led and/or participated in research, design, and development of medical software systems. Specialized in areas including, but not limited to, system analysis and design, coding, programming, testing, maintenance, and upgrades involving 3D Visualization & Measurement, Computer-Assisted Surgical & Navigation Systems, 3D Knee Motion Analysis Systems, Virtual Endoscopic Surgical Simulator Systems, and Digital Imaging & Communications in Medicine (DICOM). Studied technical articles and research papers. Participated in design and code review meetings. Conducted onsite client visits for system installation, testing, and training. Trained and supported junior developers. Key Project - Integrated Image Management System (ZedviewDB): Developed and supported Integrated Image Management System providing cutting-edge medical imaging solutions; loads and views various image formats such as DICOM, BMP, JPEG, RAW, and TIFF. Created new module for system to interface Picture Archiving & Communication System (PACS) via DICOM protocol; saved doctors significant time, and boosted company popularity and product sales. Enabled uploading and downloading of dental implant project data, developing File Transfer Protocol (FTP) based client-server application. Conducted in-depth research and feasibility analysis of PACS workflow in hospitals and clinics. Technologies used: MS Visual C++, MFC, Microsoft Access, Python, OOAD, Visual Paradigm, Sparx Systems Enterprise Architect, Redmine, Alfresco, Open source DICOM servers and tools, DCMTK, FreeImage. Key Project - 3D Visualization & Measurement Software (Zedview): Analyzed, designed, coded, and tested 3D Visualization & Measurement software using 2D slices to create 3D model data, and providing 2D image processing functions, interactive 3D visualization, 3D measurements, and arbitrary cross-section visualization using multi-planar reconstruction (MPR), etc. Enabled generation of 3D models using 2D slice data and extraction of 3D model contour lines, implementing marching cube algorithm and fast marching algorithm, respectively. Performed R&D on volume rendering via Maximum Intensity Projection (MIP) and Ray Casting methods for visualization of bone models; involved intensive study of rendering techniques using GPU. AMIR SHRESTHA amir.shrestha.usa@gmail.com (Key

Project - Zedview, .) Engineered numerous modules including for 2D image processing such as histogram equalization, Region of Interest (ROI) manipulations, image segmentation, smoothing, filtering, and image conversion, as well as 3D data export in STL/DXF formats used for developing actual sized models with 3D printing machines. Contributed to multiple other aspects of project such as managing file encryption and project file version control, system optimization, memory management, and system license management and maintenance. Technologies used: MS Visual C++, MFC, MS Developer Studio, Python, Matlab, Object-Oriented Analysis and Design, Visual Paradigm, Redmine, Alfresco, Sparx Systems Enterprise Architect, DCMTK, FreeImage, OpenGL, VTK, ITK. Key Project - Computer-Assisted Surgical & Navigation Systems (ZedHip & JIGEN): Contributed actively to development of sophisticated GUI for computer-assisted surgical and navigation systems for Total Knee Arthroplasty (TKA) and Total Hip Arthroplasty (THA). Designed and developed key modules for pre-operational planning and evaluation, as well as post-operational evaluation and simulation in TKA and THA. Researched and developed TKA system for efficient navigation in femur bone resection, as well as R&D in THA system for alignment and positioning of acetabular cup and stem components, calculation of intraoperative parameters, and intraoperative Range of Motion (ROM) simulations. Built features for graphical and interactive displaying of hip and knee joint intraoperative parameters. Enabled simultaneous evaluation and comparison of pre- and post-operative parameters, implementing shadow matching algorithm to determine 3D position of bone models via CR images. Technologies used: MS Visual C++, MFC, MS Developer Studio, OOAD, Redmine, Alfresco, Sparx Systems Enterprise Architect, DCMTK, FreeImage, OpenGL, Rhinoceros. Key Project - KneeMotion: Developed key modules for 3D analysis and graphic visualizations of Estimated Contact Point (ECP), Weight Bearing Line (WBL), Helical Axis, and Transepicondylar Axis (TEA). Provided additional features for visualization of proximity between bone and joint components via distance map. Enhanced system's ability to conduct motion analysis of fixed and mobile bearing unicompartmental knee surgery. Technologies used: MS Visual C++, MFC, MS Developer Studio, Object Oriented Analysis and Design, Matlab, OpenGL. Key Project - Virtual Endoscopic Surgery System (VESS): Performed research, system

analysis, design, programming, and testing of virtual reality application for conducting endoscopic surgical simulations; built specifically for training medical students. Technologies used: MS Visual C++, MFC, MS Developer Studio, Microsoft Access, OOAD, Redmine, Alfresco, Sparx Systems Enterprise Architect, OpenGL, VTK, SOFA framework, OpenHaptics Toolkit. LEXI CORPORATION - Tokyo, JP 2005 to 2012 Software Developer, KATHMANDU SOFTWARE DEVELOPMENT CENTER NOTE - Kathmandu 2004 to 2005 Performed extensive research on DICOM standard documentation, system analysis and design, programming, and testing. Details on request. Education Master's in Computer Science Maharishi University of Management - Fairfield, IA Bachelor's in Computer Engineering Tribhuvan University - Kathmandu Links http://www.linkedin.com/pub/amir-shrestha/4/95a/488 Additional Information CORE COMPETENCIES & TECHNICAL SKILLS R&D Software Development Lifecycle System Analysis & Design Debugging Problem Solving Artificial Intelligence Data Mining Computer Graphics & Visualization Machine Learning Medical Informatics Languages: C C++ C# Objective C Java Python Web: HTML CSS JavaScript ASP.Net Tools: MS Visual Studio XCode Eclipse NetBeans Visual Paradigm Sparx Systems Enterprise Architect MS Visio MATLAB Tortoise SVN Star UML GIT Rational Rose GoogleTest JUnit CMake Doxygen Adobe Photoshop Servers: Apache Web Server DICOM Servers (OsiriX, dcm4che, PacsOne) Project Management (Redmine) Content Management (Alfresco) Rhinoceros (NURBS modeling software) Library Packages: OpenGL OpenMP DCMTK VTK ITK LibTIFF LibXML FreeImage OpenHaptics Toolkit SOFA Framework iOS SDK for iPhone & iPad Platforms: Windows XP/Vista/7/Server 2003 Mac OS Linux (Ubuntu, RHEL) Databases: Access MySQL MS-SQL Design Patterns: Factory Strategy Proxy Observer Fa ade State Methodologies: OOAD Agile Scrum TDD CAREER NOTE: Completed on-campus studies and currently taking distance education courses to complete a Master's Degree in Computer Science. (Available for full-time, W-2 employment).

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