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TECHNICAL SKILLS

C/C++, C#, Java, Python, JavaScript	Windows CMD, Linux Shell	TFS, Git, SVN
Data Structure, Algorithm & AI	Graphics & Game Development	Scientific Computing
Design Pattern, Software Process	Embedded System	Unit Test, Profiling, Static Analysis

PROFESSIONAL EXPERIENCE

05/2015 - Present, Software Engineer Intern, Siemens Healthcare, Issaquah WA

- Implemented depth change functionality in next generation medical ultrasound system in a team
- Implemented image provider for generating dynamic mock images used on testing workstations with no ultrasound hardware.
- Eliminated 33,000 compiler warnings by refactoring software dependency structure.
- Fixed 150 defects in code utilizing static analysis.
- Worked on current generation ultrasound system upgrade integration.

08/2014 - Present, Projects on game programming at University of Utah

Game Engine Development in C/C++

This is an on-going project in series course "Game Engineering". Current outcome is a component-based 3d game engine.

- Implemented memory manager with memory allocators of various size. Aiming at optimized application execution speed from better cache use.
- Implemented OpenGL and Direct3D separate renderer sharing common interface, to work with custom Maya exporter.
- Implemented collision subsystem with collision mask and callback handler, also implemented messaging subsystem facilitating inter-subsystem communication.
- Implemented runtime asynchronous asset loading and an audio subsystem with XAudio2.

Game Prototyping

Worked in teams of 5 to 8 with other engineers and artists, developing game prototypes.

- **B.E.S.T. – Behavior Ethics Strategy Tactics – Police Training Simulator** is a serious game targeted at police officer training for various environments, currently in cooperation with Salt Lake City police station. My role is implementing camera, dialogue mechanics and user interface for VR and a desktop version.
- **Disassociation** is a game expressing how a primary school dyslexia patient sees and feels the surrounding environment. My role in this project is implementing camera and interactive puzzle mechanics.
Link: <https://www.youtube.com/watch?v=197rU5OfnSI>
- **Culture Shock** is an ARPG game with a mixture of steampunk and exotic backgrounds, the player controls the hero to explore an exotic city, fight enemies and solve problems for locals. My role in this one is implementing character attributes as well as leveling, inventory & shop mechanics, and stage based mission subsystem.
Link: <http://youtu.be/YPBjeC6Zx94>

09/2012 - 05/2014, Projects at Johns Hopkins University

AI Programming

- Implemented pursue/evade behavior, obstacle avoidance, flock & group behavior, A* path-finding, decision tree, behavior tree, finite state machine, genetic algorithm, neural network, min-max and Q learning.

Scientific Programming

- Modeled enzyme Markov process in biostatistics class final project.
- Implemented finite differential solution for dissipation equation in numerical method class final project.

Graphics Programming

- Implemented various 2D image filters and also morphing mechanism.
- Implemented a proper functional ray tracing rendering system with octree data structure for faster collision detection.
- Implemented algorithm for generating random textures including bumping effect, marble and cloud in interactive OpenGL environment.
- Implemented key frame animation based on OpenGL primitive modeling.

06-11/2013, Software Developing Intern, Little Bear Labs, Mountain View CA

Completed a client-server bidirectional parking service system.

- Implemented an iOS Client app with Objective-C, C socket library & Google Maps API, data transformed in JSON format.
- Built server on Amazon Web Services, implemented data interface with SQL Server.
- Prototype link: <https://www.youtube.com/watch?v=rXhXWnUjq2g>

2010 – 2012, Undergraduate embedded system design

Two projects completed for individual research and graduate design.

- For independent research - Designed and assembled AVR microprocessor based circuit board module which connects to automobile battery for controlling car electrics. The circuit samples battery voltage, runs corresponding subroutine to regulate mounted electrics.
- In graduate design - Assembled a handset containing a LCD touch screen, wireless card R/W module and wireless data transfer module, with each functionality of the module implemented. The data and decisions made for each card are transferred to PC server and saved in database.

ACTIVITIES & HONORS

Developing Engineering Professionalism (IET), 2011

Beijing Jiaotong University Academic Scholarship, 2010, 2011

PUBLICATION

1). Qinglin Zhao, Jiandong Zhao, Butao Pan. The Designation of Intelligent Power-saving Controller on Automobiles [A]. In: International Conference on machinery, materials science and engineering applications [C], Wuhan: 2011. 847-852.

2). ZHAO Jiandong, DUAN Xiaohong, ZHANG Lina, SUN Xin, ZHAO Qinglin. Traffic Emergency Resources Dispatch Based on Opportunity Cost Method with GA-BP Optimization Model [J]. Advances in information Sciences and Service Sciences, 2013, 5(9): 301-309.

3). ZHAO Jiandong, CHEN Xuzhe, DUAN Xiaohong, ZHAO Qinglin. A Bi-level Model for Classification and Quantization of Highway Safety service Level [J]. Advances in information Sciences and Service Sciences, 2013, 5(10): 1170-1177.

PATENT

1). Hua Zou, Qinglin Zhao, Guiqing Zhang. Convenient T-slot Bolt: China, CN202391916U [P]. 2012-08-22

2). Qinglin Zhao, Hua Zou, Automobile Folding Chair on Guide Rails: China, CN202518128U [P]. 2012-11-07

EDUCATION

University of Utah, Salt Lake City, UT

Master of Science in Entertainment & Art Engineering

Concentration: game programming, game design

present

Johns Hopkins University, Baltimore, MD

Master of Science in Mechanical Engineering (GPA: 3.69)

Concentration: biomechanics modeling and simulation, scientific programming, game programming

2014

Beijing Jiaotong University, Beijing, China

Bachelor of Engineering in Mechanical Engineering and Automation (GPA: 3.50)

Concentration: embedded system design, mechanical design, modeling and simulation

2012

Others

References available upon request