CHEN CAISHUN

HP: (private)
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PERSONAL DESCRIPTON

Strong logical and analytical thinking skills with persistent personal quality in pursuing goals and problem solving. Experienced software engineer with strong technical skill and a fast learner with independent work attitude.

EDUCATION

J.C.	Jinshan Senior High College	2001-2004
Participant in Physics Olympiad in China		
B.Sc.	Huazhong University of Science and Technology of China	2004-2008
One of top 10 universities in China at the time, graduated with distinction		
Master	Nanyang Technological University of Singapore	2014-2016

INVENTION

- AIRDesigner Technical Disclosure & commercialization through NTU NIEO, TD/185/14, **3rd Inventor**
- "Crowd Simulation Plugin (FAME)", Research Commercialization Via Deployable APIs, TD/03713, **3rd Inventor**

PROJECT DEMO

Video Demo: https://www.youtube.com/watch?v=jDCtPPcrbB0&list=UU8YFXFLNBbQc7n_gxH2DBAg

LinkedIn Profile: https://www.linkedin.com/in/xschen/

OPEN SOURCE CONTRIBUTION

github: https://github.com/cschen1205

Java: https://mvnrepository.com/search?q=cschen1205

Python: https://pypi.python.org/pypi?%3Aaction=search&term=cschen1205&submit=search

Javascript: https://www.npmjs.com/~cschen1205

C#: https://www.nuget.org/profiles/cschen1205

lua: https://luarocks.org/modules/cschen1205

COMPUTER SKILL

- **Computer Languages**: C++, C, Objective-C, Java, Visual Basic, C#, JavaScript, PHP, Python, R, MaxScript
- **Technologies**: : .Net framework(VB.Net, ASP.Net, ADO.Net), SQL, ADO 2.5, CDO, Embedded System Assembly, Visual C++(MFC), Winforms, WPF, Unity3D, Cocos2D, Drupal, mariadb/MySQL and MS SQL Server, OpenGL, Unreal Engine, Qt and ios + android mobile development skill, Computer Vision, Tensorflow, Keras, Scikit-Learn, numpy, OpenCV, Apache Storm + Kafka, VueJS, React, Angular, Spring and Spring Cloud, Apache Spark, Hadoop, ElasticSearch
- **Design Tools**: Photoshop, 3DsMax, Adobe Premier

PROJECT EXPERIENCE

From 2012 Dec to 2018 Feb, I have been working as a Research Associate with the School of SCSE in NTU. During this period, I have been in charge of a number of project application developments, which include:

Furniture AR/VR project (Mobile + WebGL)

I am currently working on an AR/VR Mobile and WebGL APP which support users to download 3D models from server and view and manipulate the furniture data and models in AR and VR environment. By having furnitures (sold from an actual e-commerce site) loaded into mobile AR and WebGL VR environment in time, it allows buyers to evaluate furnitures before making purchase. The WebGL APP also provides VR functions that allow users to create and edit 2D blueprint, and it can automatically convert 2D blueprints of a floor plan into 3D room environment that interior designers can get real-time feedback about their design. The application also supports in-app purchase of furnitures via its remote shopping cart functions
Programming Languages: C#, Javascript
Technologies Used: Unity 3D, Kudan, AR Kit, AR Core

IntelliK Game Designer (include editor, server, website, mobile APP)

I designed and implemented IntelliK, a game design application which can provide user who has no programming background with the capability of developing different games efficiently and effectively. Using Game Designer, user can design and develop different kinds of games. This application is flexible and pluggable, with different kinds of the plug in (such as runtime control script editor, tile-map editor, decision making AI editor, etc.), users can create powerful and complex games. As the effective of the Deep learning plugin, it supports users to embed machine learning applications (including but not limited to face verification and recognition and reinforcement learning) within games. With the data analytics plugin, it allow game creators to define the data they want to collect streaming data for game analytics. Server for the game designer: I implemented a server for the game designer which supports users to upload / download / add reviews to games. It also contains a content management system that allow administrators to create/edit contents and event triggers. Users can find the collection and analytics data of their games from this website. Mobile APP of the game loader: This APP allow users to download and play the games which is created by the game designer from server. Features such as video recording, sharing, chatting, data collection and multi-play as included as well.
Programming Languages: C#, java, javascript
Technologies Used: Unity 3D, spring boot + vue + iView, tensorflow, openCV

Game Artificial Intelligence and Multi-Agent System

My master work on multi-agent system is an innovative game and simulation AI that uses SARSA (state-action-reward-state-action), Q-Learn and Fuzzy ART (Adaptive Resonance Theory) network for temporal difference (TD) reinforcement learning among game agents whose collaborative behavior are supervised via crowd-AI including ant colony system, particle warm, flocking and steering behaviors. The group behavior AI is able to allow cooperative learning between multi agents in a game or simulation environment
Programming Languages: Java
Technologies Used: Swing

Maze

MAZE is a 3D game research project which inspires from visual programming concept that let users create and design their own maze game by manipulating game characters and objects graphically. It allows users to create their own maze game environment in Maze Editor. It also provides Script Maze Editor to define and design the action scripts to control the behaviors of game character. Moreover, user can examine the ability of his/her own game character in other maze game environment created by another user.
Programming Languages: C#
Technologies Used: Unity 3D

Crowd Simulation Plugin for 3ds max
Crowd Simulation Plugin for 3Ds Max provides a crowd Artificial Intelligence (AI) solution that eases the process of 3D animated film productions. Equipped with a comprehensive set of formation manipulation features, Crowd Simulation Plugin indulge designers with agilities to create groups of virtual agents of any desired formation shapes in 3dsMax, effortlessly. Similarly, a well-designed user-friendly interface is made available to enable simple customizations of complex group behaviors that suits the diverse requirements of animated film productions.
Programming Languages: MaxScript, C#, C++
Technologies Used: 3Ds Max

Dependency Game AI library
I designed and implemented a dependency game AI library which can be easily used to create and modify different AI in games. This library should contain different kinds of Game AI technologies: Decision making, Path finding, Tactical and Strategic AI, Learning AI, Resource manager and others. Now I have finished the decision making system and some parts of the Learning AI.
Programming Languages: C#
Technologies Used: .Net

Decision making Rule Design Tools
I designed and implemented a GUI Tool for users to easily and quickly to create and modify the rule files used in the decision making system of the Game AI library. The Game AI library would read these rule files to generate different decision making AI for different game roles. With this tool, users can generate the rule files (xml file) without coding.
Programming Languages: C#
Technologies Used: .Net, WPF

Boy and Robots Project (unity application part)
I designed and implemented a unity application to get series of screen captures for robot motions which follow the result of the FAME library. FAME is a flocking library which can generate location of each agent in flock of every frame. This unity application can generates realistic flocking motion (based on the FAME library) and control each characters' action by the input commands. Then it can automatically do the screen captures to get series pictures which would use to generate videos.
Programming Languages: C#
Technologies Used: Unity 3D

From 2011 Aug to 2012 Nov, I have been working as a Project Officer with the School of EEE in NTU. During this period, I have been in charge of a number of project application development, which include:

Memetic Technique for Multiple Unmanned Aerial Vehicles Tasks Allocation
I designed and implemented the memetic algorithms in C++ for multiple unmanned aerial vehicles tasks allocation, which assign the scanning tasks for a set of heterogeneous unmanned aerial vehicles, I later also help to designed and developed the socket client in Python for interfacing with the UAV hardware systems
Language: C++, Python
Technologies Used: .Net Winforms

Unmanned Vehicle Automatic Control System
I designed and implemented the automatic control system that allows which design routing for UAV and communication modules that direct the UAV in the air. The modules allows camera imaging from the UAV as well as send and receive commands to and from UAV.
Language: C#
Technologies Used: MavLink

Multi-Objective Optimization
I designed and implemented evolutionary computation algorithms for solving real-world multiple-objective optimization problems involved
AI implemented: NSGA, CMAES, Hybrid Game, HAPMOEA
Programming Languages: C++
Technologies used: Shark Lib

Queueing Models
I designed and implemented queueing models for study in Operations Research
Programming Languages: C#
Technologies used: .Net Winforms

Unity3D Application
I designed and implemented an Unity3D-based game application for interfacing with a piezoelectric controller for innovative game playing
Programming Languages: C#
Technologies used: Unity3D

From 2008-Jul to 2011-Aug, I have been working for Ping An Technology Corporation.LTD as a System Management Engineer which is mainly responsible for system environment building and operation and maintenance management. Project experiences include:

Enterprise instant messaging software
Description: This program is mainly used in LAN of instant messaging, also can used for the wan. Functions include: user register and login, text and images of the instant transmission, file transfer, video chat, multi-user information communication, networking drawing function, etc. Look similar QQ, including the server and client two parts.
Language: C#
Technologies Used: SQL Server 2008,.NET WinForms, ASP.NET

On-line examination system
Description: The program mainly realizes online examination and score goals, divided into three operating authority: administrators, teachers and students. Mainly include teachers' information management, the student information management, examination management, the exam management and analysis, management background, the function of exam results inquires.
Language: C#
Technologies Used: SQL Server 2005, ASP.NET

Supermarket management system
Description: Functions include: catalogues management, inventory initialization, purchase and warehouse or shelving management; Inventory; The cashier; Return; Online inquiry; Inquiry, statistics and reports, sales analysis, the Vip customer information management, staff information, shopping integral management, inventory alarm etc, online inquiry with B/S model, the rest of the function with C/S mode realized.
Language: C++
Technologies Used: SQL Server 2005, MFC

System optimization tools
Description: Function mainly includes: system information detection, the system optimization (through modifying registry realize), super tool (including clean up garbage documents, the right-click menu management, desktop wallpaper changer and some system tools shortcuts), task manager, etc.
Language: C#
Technologies Used: SQL Server 2005, .NET WinForms

Mail server system
Description: The Application support the mail compilation, send email, attachment upload and download, local draft box, the local store, mailing list view, mail server account configuration and storage function; Ability to perform functions required friendly graphical user interface (GUI).
Language: Java
Technologies Used: Eclipse, SQL Server 2005

Task manager

Description: Imitate Windows system, the application realize the task manager under Linux environment. Functions include: the process management, system static information and dynamic information display, CPU and memory utilization of graphically, module information display, power management, etc. In addition, under Linux environment, It can also compile kernel, add a system call, add device drivers, etc.
Language: C
Technologies Used: GTK + 2.0

Comprehensive site

Description: The web site includes: the press center, video demand, user registration and login, BBS, electronic maps and background management module.
Language: C#
Technologies Used: Access 2005, Flash