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Zhuofang Dai

Skills

Language **Python = C++ = Java > CUDA = Lua = JavaScript**.

Game Dev. **BigWorld, Havok, Unity3D**.

Java Web Dev. **RESTful API, HTML, JSON, Spring, Jackson, Maven**.

Engineering **SVN, Git, TDD, Agile**.

Work Experience

2014–2017.7 **Senior Game Developer at Netease Games**, *Inception Group*.

- **GamePlay:** designed and implemented the state machine of hero behavior, the framework of hero skills and the synchronized online combat.
- **Engine:** created a texture processing solution to improve the efficiency of hero skin production, which was honored the Technological Invention Award by Netease Technical Committee.
- **Optimization:** improved performance(20%-50%) in multiple projects by leveraging architecture refactor, paralellism and language level tuning.

2013 **Summer Analyst at Morgan Stanley**, *RATE Group*.

Implemented a server using JAVA Spring and SOAP, which provided services of interest rate derivatives risk calculation used by the team internally.

Project Experience

2017.7 **XChange**, *Java*, Independent Project, github.com/timmolter/XChange.

A popular(1.1K stars) library providing consistent APIs for interacting with 50+ Bitcoin and other crypto currency exchanges for trading.

- Designed and implemented most accounting and trading functions of jubi.com exchange provider based on RESTful APIs.

2014–2017.7 **WildFire**, *Python, C++*, Company Project, wf.163.com/index.html.

A 3D action multiplayer online battle arena (MOBA) video game relseased in 2016.

- Created a texture processing solution that supports gamers to customize the color scheme of hero skins efficiently. This solution improved the workflow of skins production and made it more efficient, for which it was honored the Technological Invention Award.
- Improved and parallelized the fog of war(FOW) algorithm, which reduced the FOW runtime overhead on main thread from 20 % to 0.1%.
- Game engine optimization and gameplay programming.

2017.3 **A Certain Magical Index**, *Python, C++*, Company Project.

A 3D action mobile game based on the comics "A Certain Magical Index".

- Helped the development team to analyze and solve the bottlenecks of game logic. Reduced the logic overhead by 75%.

2015–2016 **WildFire Awakening**, *Python, C++*, Company Project.

A 3D action mobile game released in the Apple Store in March 2017.

- Created the core architecture of combat: including the state machine of hero behavior, the the framework of hero skills and the synchronized online combat framework.

2011–2014 **Hydra**, *CUDA, C*, Research Project, Published in ICPP 2014.
Hydra aims at improving concurrency bug detection performance on fused CPU-GPU architectures. By parallelizing the detection algorithm on GPGPU, Hydra achieves a nearly overhead free runtime detection.

2012 **HTM+**, *CUDA, C*, Independent Project.
A CAPTCHA breaker based on HTM algorithm, which is a neural network algorithm in pattern recognization.
- Created a CUDA version algorithm of HTM, which achieved 45x speedup w.r.t. CPU version.
- Improve recognition rate(60%->71%) by leveraging "eye movement" technique.

This project won the First Prize in NVIDIA CUDA Competition 2012.

2011 **Delta-Stepping+**, *CUDA, C*, Independent Project.
The CUDA version of Delta-Stepping algorithm, which is an state-of-art algorithm in the SSSP(Single Source Shortest Path) area. It achieves 30x–60x speedup w.r.t the sequetial Intel i7 version.
This project won the Second Prize in NVIDIA CUDA Competition 2011.

2010 **Vehicle Recognition**, *C++, MFC*, Independent Project.
This system can identify abnormal behavior on the basis of perception of moving targets. I was responible for the UI implementation based on MFC.
It won the Outstanding Prize in Jiangsu Cup National Software Competition 2010.

2009 **Dream Bubble**, *Java ME*, Independent Project.
A bomb-man game based on Java ME. I was responsible for the network communication and synchronizaton via bluetooth(four players at most).
This project won the Second Prize in Software Design Competition of Nanjing University 2009.

Education

2011–2014 **MS in System Software**, *Software School, Fudan University*, Top5 in China.
3-year academic research mainly on accelerating concurrency bug detection by GPGPU.

2007–2011 **BS in Software Engineering**, *Software School, Nanjing University*, Top5 in China.

Awards

2016 **Netease Technological Invention Award**, *The Second Prize*.

2014 **Outstanding Graduates Awards of Fudan University**.

2013 **National Scholarship of Fudan University**.

2012 **NVIDIA CUDA Campus Programming Competition 2012**, *The First Prize*.

2011 **NVIDIA CUDA Campus Programming Competition 2011**, *The Second Prize*.

2010 **"Jiangsu Software Cup" National Software Competition**, *Excellent Prize*.

2009 **The 7th Nanjing University Innovative Software Competition**, *The Second Prize*.

Publications

2014 **Zhuofang Dai**, Zheng Zhang, Haojun Wang, Yi Li and Weihua Zhang, *Parallelized Race Detection Based on GPU Architecture*, 2014 Annual Conference of Advanced Computer Architecture(ACA 2014), **Best Paper Award**.

2014 **Zhuofang Dai**, Haojun Wang, Weihua Zhang, Haibo Chen and Binyu Zang, *Hydra: Efficient Detection of Multiple Concurrency Bugs on Fused CPU-GPU Architecture*, The 43rd International Conference on Parallel Processing(ICPP 2014)).