

EMPLOYMENT

Student Employee **DePaul University** **Jul 2015 - Jun 2017**

- Implemented alone a video recording daemon application which can directly record MP4 video format as well as provide the video and audio source to the monitoring platform. This application is testing, and will replace the old version in this fall.
- Implemented alone the classroom monitoring application which can monitor the video and audio of up to 100 classrooms. For best monitoring this application visualized the audio using the fast Fourier transform (FFT) algorithm.

Software Architect **China Sport Lottery Technology** **Apr 2014 - Jul 2015**

- Developed a distributed lottery trading system based on Linux(CentOS), which supports more than 250,000 clients and is easy to extend the capability. And the availability is 99.99%.
- Researched improvements to the architecture of this system and made it more manageable. Import ZooKeeper to store all the information of each component, let them can find each other easily and flexibly. Using the distributed memory cache to cache all the data which would be frequently used.

Senior Software Developer **China International Futures** **Nov 2012 - Apr 2014**

- Led the development team for the Futures Trading System for Enterprises based on Windows platform. Supervised implementation of the architecture and the core components. This team included 5 developers, 2 testers and 1 DBA.
- Led the development team for the Risk Management of Futures Trading System for Enterprises which can do pre-trade and post-trade risk management.

Senior Software Developer **Ensurebit** **Aug 2005 - Nov 2012**

- Led a team to implement projects which Lenovo had outsourced. Projects were focused on improving the user's experience of his Laptop. Similar to Veriface, EasyCapture, Idealife, Ikey Security solution, etc. And I am the core developer and project manager of Veriface, from version 1.0 to 4.0.
- Developed the custom product PowerShadow (http://download.cnet.com/Power-Shadow/3000-2094_4-10359673.html), which extended existing Windows security functionality. Back in 2006, the price of a copy version of this product is 39.9\$, but nowadays it is free.

Software Developer **Lenovo** **Aug 2003 - Aug 2005**

- Implemented the virtual file disk driver based on Window 98 using VXD driver framework.
- Implemented the Blowfish and MD5 algorithm using C++.

EDUCATION

Chicago, IL **DePaul University** **Jul 2015 - Jun 2017**

- M.S.E. in Software Engineering. Current GPA: 3.9/4.0.

Xi An, China **Northwestern Polytechnic University** **Sep 1999 - Jun 2003**

- B.S.E. in Software Engineering.

PROJECTS

- **Lottery Trading System** (2014 – 2015). Complex distributed system based on Linux(CentOS) and focused on high performance and availability lottery trading. **C, C++**
- **Futures Trading System for Enterprise** (2013). A system which lets all the staff share one exchange account to do futures trading. Also includes its own settlement subsystem. **C, C++, C#**
- **Risk Management System for Futures Trading System** (2013). A risk management system which can prevent improper futures trading by adhering to predefined rules, and also can find the position and fund risk after

trading. **C, C++, C#**

- **DePaul Classroom Monitoring Platform** (2016). A direct way to monitor all of the classrooms. You can check the video and audio in real-time. **C++, C#, Window Form, DirectShow, Windows Media Format**
Website: <https://ethanhao.github.io/portfolio.html>
- **VeriFace** (2005-2012). A Windows desktop application which is pre-installed on Lenovo laptops. This is the most famous Lenovo application during that time. I developed a lot of animated and transparent user interface. **C, C++, DirectShow, D2D, MSGINA, Authentication Interface, Image Processing,**
Website: <https://ethanhao.github.io/portfolio.html>
- **EasyCapture** (2005-2008). A fun camera application which mixed the animated frame into the video, so that you can take picture and record video with a very beautiful frame. At this project I developed a skin change framework based on MFC. **C, C++, DirectShow, D2D, MFC, Image Processing**
Website: <https://forums.lenovo.com/t5/Lenovo-U-and-S-Series-Notebooks/Ideapad-S-Series-Lenovo-Easy-Capture/ta-p/231664>
- **PowerShadow**(2005-2012) This program takes an interesting approach to protecting your privacy and keeping your computer safe from offenders. In short, PowerShadow creates a virtual drive on your computer. When you enter shadow mode, the application saves all system changes and user activities on the virtual drive instead of on your actual PC. **C, C++, Windows Driver Framework.**
Website: <https://ethanhao.github.io/portfolio.html>

OPEN SOURCE

- **EpollServer**, A high efficient TCP server based on Epoll, Using reactor and producer consumer pattern. And use memory pool to improve the efficiency. prefer to use binary protocol to support some financial trading. **C, C++,Linux,TCP/IP,EPOLL,MultiThread,MemoryPool,Reactor,Producer and Consumer.**
Website: <https://github.com/EthanHao/EpollServer>
- **MemLeakTracker** A memory tracker helping class to find memory leaking in your C++ application. **C++,Memory.**
WebSite: <https://github.com/EthanHao/MemLeakTracker>
- **FSTP**. A highly flexible and manageable distributed simulation trading platform for futures. **C, C++,Linux,TCP/IP,EPOLL,MultiThread,MemoryPool,Agile**
Website: <https://github.com/EthanHao/FSTP/tree/SPRINT1-ETHAN>
- **C++ Log Library**. A very useful, and thread-safety log library based on Linux. Using C++ 11 to implement. Through this library you can generate log file of each log type every day. **C, C++**
Website: <https://github.com/EthanHao/CLog>
- **Media Source Provider for monitor end**. A Media source provider program including audio and video on windows platform. Using **DirectShow, Windows Media Foundation, windows Media Format and D2D**
Website: <https://github.com/EthanHao/MediaMonitorSource>
- **Sweeper simulation**. This application is a simulation for a fictional clean sweeper. You can know how the clean sweeper works through this application hopefully. **Java, Java Swing, GUI, Shortest Path.**
Website: <https://github.com/EthanHao/SweepClean>
- **Tetris**. A Tetris game prototype using C#. **C#, Windows Form.**
Website: <https://github.com/EthanHao/Tetris>

LANGUAGES AND TECHNOLOGIES

- C; C++; C#.NET; PL/SQL; JavaScript;
- Redis, ZooKeeper, Message Queue, Socket, Linux, COM,DirectShow,D2D,Windows Media Format, Windows Media Foundation, TCP/IP, Windows Driver etc.