

# Tony (Hua) Liu

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CONTACT INFO	401 Shady Ave, Apt. C502 Pittsburgh, PA15206	Tel: (408) 680-4889 E-mail: hualiu@andrew.cmu.edu
EDUCATION	<b>Carnegie Mellon University</b> , Pittsburgh, PA <i>Master of Information Systems Management</i> <ul style="list-style-type: none"><li>Coursework: Distributed Systems, Cloud Computing, Introduction to Computer System, Introduction to Machine Learning, Data Structure for Application Programmers, Internet Technologies.</li></ul> <b>Nanjing University</b> , Nanjing, Jiangsu, China (PR) <i>Bachelor of Management</i> <ul style="list-style-type: none"><li>Major: Information Management and Information Systems</li></ul>	Aug 2013 – Dec 2014 GPA: 3.83  Sep 2009 – Jul 2013 GPA: 3.9
SKILLS	<b>Back-end Development:</b> Java, Servlet, Jersey, Python, MySQL, Maven <b>Front-end Development:</b> JavaScript, JQuery, HTML, Chrome Extension <b>Data Analysis:</b> Hadoop, Map-Reduce, HBase, Matlab <b>Cloud Computing:</b> AWS	
WORK EXPERIENCE	<b>Carnegie Mellon Cylab</b> , Pittsburgh, PA <i>Research Assistant</i> <ul style="list-style-type: none"><li>Explored distributed database solutions considering design trade-offs, usability, data model, and performance to handle terabyte-level data.</li></ul> <b>RedMorph LLC.</b> , Pittsburgh, PA <i>Java Developer Intern</i> <ul style="list-style-type: none"><li>Researched on the solution to protecting the security and privacy of Internet browsing.</li><li>Designed and developed a Chrome extension to filter the URLs, tracking cookies, and profanity contents.</li></ul>	Sep 2014 – Dec 2014  May 2014 – Aug 2014
ACADEMIC PROJECTS	<b>API Re-design and Implementation (REST, Jersey)</b> <ul style="list-style-type: none"><li>Re-designed the RESTful API of the client company to provide well-structured and scalable data endpoints.</li><li>Designed and implemented an OData-like "search" endpoint to support queries with logical operators and comparators.</li><li>Visualized the documentation with Swagger Framework.</li></ul> <b>Map-Reduce Framework Implementation (Java)</b> <ul style="list-style-type: none"><li>Designed a map-reduce system to facilitate parallel computing of fixed-size data items.</li><li>Implemented map-reduce system and computational framework from scratch.</li></ul> <b>Process Migration Framework (Java)</b> <ul style="list-style-type: none"><li>Design and Implemented a system to balance the workload among the cluster by manually migrating the process to other nodes.</li><li>Overrode the I/O classes to handle the read/write miss after the migration, and deployed the system upon Andrew File System.</li></ul> <b>Web Service Performance Competition (AWS, Servlet, Hbase)</b> <ul style="list-style-type: none"><li>Enhanced a RESTful web service with non-blocking IO Servlet, processing 10000+ queries per second(QPS) for plain text responses.</li><li>Benchmarked between MySQL and HBase database. Configured HBase to improve the performance for specific data query demands with 3000+ QPS.</li><li>Deployed the service on AWS EC2 and scatter the traffic with ELB. Scaling up/down according to the workload, which saved 30% of the cost with similar response rate.</li></ul>	Sep 2014 – Nov 2014  Jul 2014 – Aug 2014  May 2014 – Jun 2014  Feb 2014 – Apr 2014