



The Young Chen Academy of Science

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科学 *Science:*

Cloud Computing

技术 *Technology:*

Java,PHP,Python,C/C++,scala

相信科学, 分享技术

Believing in science and sharing technology

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1 摘要 Abstract

这是一份技术总结文档，作者在国内从事互联网技术行业 15 年以上，第一篇技术日志从大学时期开始记录，在北京著名互联网公司的工作过程中，也一点一滴地记录了一些遇到的技术问题，时间跨度超过 15 年。

技术领域涉及到 `mysql`、`pgsql` 等常见存储，更是横跨至复杂的深度神经网络设计、云计算安全等领域，整体更偏工程一些。

如果将过去的时间分为前中后三段，前段时间主要在应用程序开发，涉及到的主要是语言特性、应用配置技能。中段时间开始研究存储层的东西，更加关注深层的细节。后段时间开始理解商业和管理，对团队理解、方法论、数据相关的内容更多一些。

从所有的这些内容看下来，可以想象一个技术人，从技术爱好走向专业深度诠释，亦可侧面感受行业浪潮对于技术的影响。

This is a summary tech document. The author worked in the internet industry of China for more than 15 years. I wrote the first tech article when I was in university. When I worked for famous tech companies in Beijing, I also recorded loads of tech issues.

The content is of more than 15 years' duration. The tech domain contains normal storage such as `mysql`, `pgsql` etc. Moreover, there are some more complicated contents including DNN design, security of cloud computing etc. Mostly, they are about engineering.

I divide history into three phases. In the first phase, I focused on coding skills including various languages, applications configuration skills etc. In the second phase, I worked in the storage layer. There were more detailed and deeper contents. When it came to the third phase, business and management was the point. There were more things about team management, methodology, data etc.

From all the articles, you can imagine the history of a tech person who grew up from a tech geek to a deep professional. You also can feel the impact of industry wave on technology.

2 序言 Introduction

从 1997 年开始讲起，当时的小霸王学习机简直是梦寐以求的配置了，冥冥之中有一种对计算机键盘的追求，在 `windows98` 都还没出世的时候，我用小霸王五学习机学会了五笔输入法，从一开始就解决了一个南方人拼音不好的问题。

高中时我为班级开发了班级网站，有一些留言板和相册的功能，用了 `asp access`，当时很多知识都需要从新华书店的计算机书里找答案，从此产生了对计算机领域的深厚热情。

时间到了高考填写志愿的时候，机缘巧合遇到了云南大学的一位教授，旁边的人说他是著名的“x 物理”（姓 x，是物理教授），我自豪的告诉他我所有的志愿都是计算机科学与技术专业，不服从调剂。他说的一句话就让我非常失望了，“计算机以后肯定是技术，是不是科学就不一定了”。

在第一阶段的计算机经历，更多的内容还是关于技术的，而非科学，大学校园给了一个非常好的环境可以潜心写代码，课堂内容也将数据结构、系统结构、编译原理等基础知识体系搭建起来。

在第二阶段，因为市场上常见的语言都已经摸了一遍，开始选择一个特定的

方向，结合工作需要，进行深入的研究。

在第三阶段，平台发展要求个人能力多样化发展，简单的写代码已经不能为企业所需要了，开始考虑团队级别的事情，更多的与人打交道，但依然对写代码恋恋不舍，对事物的发展预判，数据的使用都有了更深的理解。

The Xiaobawang learning machine was my dream machine in 1997, which was a kind of machine like Gameboy with a computer-like keyboard. At that time, windows98 was not ready. I learned the WUBI input method from the learning machine. That was good for a southern person who is always not good at PinYin.

When I went to high school, I developed a class website, which had bbs and album functions designed by asp and access. Lots of knowledge had to be found in the books, which were in the XinHua bookstore. From that time, I began to learn computer technology with strong enthusiasm.

I met a professor of YunNan University when I graduated from high school. He said to me that computers could be technology but would not be science. I was disappointed with that guy.

In the first phase of my computer learning experience, it was more about technology, but not science. At the University campus, there was a good environment to study the subject in more depth. The course of computer science was also building fundamental knowledge with data structure, system architecture, compiler theory etc.

In the second phase, I started to research a specific direction, which could combine with my work. I did more research on the work details.

In the third phase, the company required further management. With the development of the platform, coding is not the most important thing for me. I began to think about teamwork, and had more time to talk with others. Even though I have no time to develop projects, I still miss the feeling of coding. At that time, I obtained the skills of analysing.

3 第一阶段 The first phase

2005 年，写下了第一篇 (Chen, 2005)，记录了 mysql 的字段的高低，以及如何给 mysql 用户加减权限，后来又补充了一篇 (Chen, 2006e)，都非常实用。后来工作了，又有机会进行了 postgresSQL 的文档补充，包括 (Chen, 2008p) 介绍了安装，(Chen, 2008l) 添加了权限设置，(Chen, 2008k) 和 (Chen, 2008o) 以及 (Chen, 2008s) 增加了集群方案 pgpool 和 plproxy 的安装和配置，(Chen, 2008u) 记录了一些 pgsq 的常见问题，包括数据同步问题。早期的日志是记录在百度 hi 空间里，这导致了时间上只是个大概，并不十分准确。

还有一些内容是关于操作系统的应用，(Chen, 2006d) 是在 gnome 下的 gtk 代码，通过一系列的文章，包括 Linux(Chen, 2006c)，汇编 (Chen, 2006b)，网络 (Chen, 2006g)，反编译 (Chen, 2007a)，C 语法 (Chen, 2008h)，协议抓包 (Chen, 2008y)，最终推出了当时在校园里大家都要用的拨号软件 myNet，并将代码进行了详细的分析，连载文章见 (Chen, 2008a, 2008b, 2008c, 2008d)，现在看当时技术水平还挺在线的。

还有很多与服务器端相关的配置经验总结，包括 Apache(Chen, 2006a)，NFS 配置 (Chen, 2006f)，jQuery(Chen, 2008i)，smartDNS(Chen, 2008w)，PHP 收发邮件 (Chen, 2008m)，SSH(Chen, 2008x)，配置管理工具 Cobbler(Chen, 2009t)，iptables(Chen, 2009q)，这阶段的配置经验，其实在网络上都可以找到，不同的是记录下的都是当时实验成功的。

这阶段还有一些关于不同语言细节的，包括 Perl(Chen, 2008j)，VB(Chen, 2008t)，PHP(Chen, 2008n)，还有一些关于 C 的细节，入门的有 (Chen, 2008v)，深入的有如 sscanf(Chen, 2008q)，PHP 内核里的 TSRM_CC (Chen, 2008f)，技术分布在偏 C、PHP 的角度，也是当时的技术趋势。

也有一些早期关于创业的思考 and 文摘，他们是 (Chen, 2007b)，BBS 发展 (Chen, 2008e)，除此之外还有一些转载过来或者会议记录的优秀架构或者发展过程的文章，他们是人人网的架构 (Chen, 2009a)，手机之家 (Chen, 2009p)，雅虎和淘宝当时怎么用 Hadoop (Chen, 2009l)，GIS 相关技术 (Chen, 2009f)，一个大列表 (Chen, 2008z) 现在多半打不开了，用 PHP 搞当时很流行的开放平台 (Chen, 2008r)。

I wrote the first article (Chen, 2005) to record the length of mysql fields and the method of flushing privileges of mysql. Later, I enclosed the second one (Chen, 2006e). Both of them are useful. After working in the office, there are more articles about PostreSQL including installation (Chen, 2008p), permissions settings (Chen, 2008l), Ppools and Piproxy for the usage of cluster (Chen, 2008k, 2008o, 2008s), common issues (Chen, 2008u). The date of these articles were not accurate because they were transferred from Baidu Hi.

Some more articles were about operation systems. The first one is about gtk coding in gnome (Chen, 2006d). A series of articles described the 802.1x client on Linux, including Linux (Chen, 2006c), assembler programming (Chen, 2006b), networking (Chen, 2006g), decompilation of C (Chen, 2007a), C language (Chen, 2008h), protocol cracking (Chen, 2008y). A client named myNet was used on campus for the 802.1x protocol. The introduction of it was shown in articles in serial form (Chen, 2008a, 2008b, 2008c, 2008d).

There were a lot of articles to describe the server configuration, including Apache (Chen, 2006a), NFS (Chen, 2006f), jQuery (Chen, 2008i), smartDNS (Chen, 2008w), php mailer (Chen, 2008m), SSH (Chen, 2008x), Cobbler (Chen, 2009t), iptables (Chen, 2009q). All of the articles were tested by myself.

Different languages were showed in this phase, including Perl (Chen, 2008j), VB (Chen, 2008t), PHP (Chen, 2008n). There were also some details of C, including basic knowledge (Chen, 2008v), research on sscanf (Chen, 2008q), TSRM_CC in PHP (Chen, 2008f). All of them were the trend of technology at that time.

There were also some articles about startup, including cases (Chen, 2007b), development of BBS (Chen, 2008e). Some articles were from other websites or famous architecture, including RenRen (Chen, 2009a), mobile home (Chen, 2009p), the usage of hadoop in Yahoo and Taobao (Chen, 2009l), GIS (Chen, 2009f), a list (Chen, 2008z), open platform by PHP (Chen, 2008r).

4 第二阶段 The second phase

第二阶段，花了大量的时间在存储技术，搜索技术，技术细节上，Berkeley DB 的收藏 (Chen, 2008g)，java 使用 bdb (Chen, 2009i, 2010g)，一系列 kv 相关的，memcached (Chen, 2009o)，Discuz BBS 的缓存设计 (Chen, 2009b)，当时很流行的 TC (Chen, 2009s)，用 java 压力测试 TC (Chen, 2009r)，设计人人网分布式存储时的思考 (Chen, 2009m)，linkedin 的 dynamo 实现伏地魔 voldemort (Chen, 2009j)，分布式存储的开发心得 (Chen, 2010l)，这篇在淘宝推出 oceanbase 的时候做了些记录 (Chen, 2011j)，还有这篇国内互联网公司的数据连接方案也不错 (Chen, 2010e)，另外这篇是《程序员》杂志的稿子，讲的是在人人网开发 nuclear 分布式存储的过程和心得 (Chen, 2010f)。

关于中文全文检索，当时记录了比较好用的 pgsq+bamboo 的方案，连载文章见 (Chen, 2009c, 2009d, 2009e)，当时的 sphinx 也很流行 (Chen, 2010c, 2010h, 2010i)，当时还用 sphinx 做了一次二度好友的推荐 (Chen, 2010j)。

很多内容由浅入深的在探讨技术细节，这篇是研究 mysql 的索引技术 (Chen, 2010d)，常见的 jdbc 的 io 锁原理 (Chen, 2010b)，根据系统负载决定代码运行的实现，在做一些后台任务时非常有用 (Chen, 2010a)，如何精准控制用户上传的文档类型 (Chen, 2009k)，JAVA 的 list 转 byte 数组的研究 (Chen, 2009g)，java 并发编程的原理 (Chen, 2009n)。当时 PHP 和 Java 是无缝切换的，在工作中都要用，这篇研究了 PHP 里 call_user_func (Chen, 2010k)。这篇还介绍了当时比较出名的 hashdos 攻击的各种补救和原理 (Chen, 2011i)，这篇直接在 nginx 做了点改动达到防备效果 (Chen, 2012i)，

C 环境的问题总是很奇特，所以选了其中 3 篇，MAC 开发更新 gcc(Chen, 2015b)，C++ 的 protobuf 有一个很难查的 Core Dump 坑 (Chen, 2016a)，C++ 的 SHA1WithRSA/ras/X509 怎么写逻辑 (Chen, 2016b)。

In the second phase, I spent a lot of time on storage, search engine, details of technology. Berkeley DB was researched in some articles (Chen, 2008g, 2009i, 2010g). A series of articles about KV storage were shown in serial form, including memcached (Chen, 2009o), the cache design of Discuz BBS (Chen, 2009b), TC storage (Chen, 2009s), load test of TC by java (Chen, 2009r). There were some considerations of the design of RR distributed storage system (Chen, 2009m) and the development summary (Chen, 2010l). Some other famous companies also had the details of storage, including voldemort from LinkedIn (Chen, 2009j), OceanBase from Taobao (Chen, 2011j), general summary from domestic companies (Chen, 2010e). An article was published in the CSDN journal describing the experiences and reflections of Nuclear distributed storage system (Chen, 2010f).

Chinese fulltext search was also a hot issue. PostgreSQL with Bamboo is a good design (Chen, 2009c, 2009d, 2009e). Sphinx was also very popular (Chen, 2010c, 2010h, 2010i). I used sphinx to design a case of people you may know (Chen, 2010j).

A large amount of contents were talked about the technique details, including index technology of mysql (Chen, 2010d), common theory of IO locking in JDBC (Chen, 2010b), accurate control of the uploading file type (Chen, 2009k), research of List and byte array in Java (Chen, 2009g), theory of concurrent programming (Chen, 2009n). Running different codes by the different system load situation was very useful when you needed to design some task running background (Chen, 2010a). I had to use both Java and PHP in the office. This article researched the call_user_func in PHP (Chen, 2010k). HashDos attack was very popular at that time, so here was the explanation and prevention (Chen, 2011i), and the changing of nginx to prevent the attack was also uploaded (Chen, 2012i).

C environment was always special, so there were three articles describing it, including updateing gcc on Mac (Chen, 2015b), a core dump issue with c++ and protobuf (Chen, 2016a), the Sha1WithRSA/ras/X509 in C++ (Chen, 2016b).

5 第三阶段 The three phase

第三阶段的内容比较繁杂，有深有浅，也有方法论。Erlang 快速入门 (Chen, 2011a)，然后开始从安装到压力测试再到核心源码，连载研究一个叫 Riak 的分布式存储 (Chen, 2011b, 2011c, 2011d, 2011e, 2011f, 2012j, 2012z)。

Rose 框架使用手册连载，历时 3 个多月 (Chen, 2012k, 2012l, 2012m, 2012n, 2012o, 2012p, 2012q, 2012r, 2012s, 2012t, 2012u, 2012v, 2012w, 2012x)。

cloud foundry 代码阅读手记，记录了所有的 ruby 学习 (Chen, 2012y)、cf 代码学习、服务器虚拟化文案 warden 细节，用时大概 2 个月 (Chen, 2012a, 2012b, 2012c, 2012d, 2012e, 2012f, 2012g, 2012h)。

有段时间公司开始成立 IoT 业务，于是就开始研究开源硬件，就有了一系列的 Arduino 开源硬件的学习手记，由浅入深分别是 (Chen, 2013c, 2013d, 2013e)，后来因为无线控制的需要，研究了各种 Arduino 的无线控制方案 (Chen, 2013a)，最终用上了低功耗蓝牙 (Chen, 2013b)，集成的板子 BLUNO(Chen, 2013f)。

公司进入平台期，各项技术趋于稳定，于是有大把的时间开始总结，就有了一系列的连载文章，记录了在小米六七年时间创业期的技术总结 (Chen, 2016c, 2016d, 2016e, 2016f, 2016g)。

因为有很长一段时间一直在研究网络层，于是便有了大量的关于 IO 的文章，socket read 在各层的理解 (Chen, 2014k)，移动网络 (Chen, 2014l)，移动互联网系统架构陷阱 (Chen, 2013j)，JAVA 的 IO 理解 (Chen, 2009h, 2014c, 2015a)，怎么压力测试 IO(Chen, 2014m)，facebook thrift 相关的也不少，用 disruptor 实现的 nio 的压力测试 (Chen, 2014b)，cassandra 是怎么用 thrift 的 (Chen, 2013g)，早期版本的 thrift 升级有大坑 (Chen, 2014h)，用 resin 组合对 thrift 进行压力测试 (Chen, 2013h)，也有 thrift 的入门教程 (Chen, 2011g, 2011h)。

IM 领域，一直在研究接入层，于是有一系列的相关文章，调研一系列的协议

Bosh、Comet、longpolling 之类的 (Chen, 2014a), java 的 xmpp 实现之一的 Tigase 分析 (Chen, 2014i, 2014j)。

Scala 也在一段时间里保持着在分布式服务处理的重要角色, 于是也有一系列的文章记录, 入门手记 (Chen, 2013i), akka 是 scala 的 actor 模型, 一系列的实用连载, 用 java 调用 akka, 可以在线上使用 (Chen, 2014d, 2014e, 2014f, 2014g)。

在人工智能如火如荼的时代, 也不能少了一系列的文章, 利用 keras 和 tensorflow 完成支付风控 (Chen, 2017c), 一些基础知识包括优化器、激活函数、评价函数等 (Chen, 2017b), Caffe 的使用入门 (Chen, 2017a)。

关于团队管理和整体技术架构, 也有一些文章记录了最近的变动。这篇是一篇关于团队目标和 OKR 相关的 (Chen, 2019)。微服务架构很流行, 这些文章都是相关的记录 (Chen, 2018a, 2018b, 2018c)。

In the third phase, the articles were complicated, which are about deep explanations and methodology. An article was about Erlang quick starting (Chen, 2011a). Then a project named Riak, which was a distributed storage system, was researched by a series of articles from installation to load testing and core source codes (Chen, 2011b, 2011c, 2011d, 2011e, 2011f, 2012j, 2012z).

I spent more than 3 months on Rose manual, which was a famous web framework base Java Spring (Chen, 2012k, 2012l, 2012m, 2012n, 2012o, 2012p, 2012q, 2012r, 2012s, 2012t, 2012u, 2012v, 2012w, 2012x). And I spent more than 2 months on research of Cloud Foundry. They were the learning of Ruby (Chen, 2012y), the learning of CF and Virtualization named Warden (Chen, 2012a, 2012b, 2012c, 2012d, 2012e, 2012f, 2012g, 2012h).

Because the company started the IoT business, I started the research of open hardware. There were some research results of Arduino (Chen, 2013c, 2013d, 2013e). When it came to the wireless methods, various control cases were researched (Chen, 2013a), and at last I chose the low power bluetooth (Chen, 2013b) and the integrated resolution BLUNO (Chen, 2013f).

When the company was not in such a busy situation, I started to review the history of development in XIAOMI. So there were lots of technique summaries in XIAOMI, recording the history of startup period in XIAOMI (Chen, 2016c, 2016d, 2016e, 2016f, 2016g).

Because I spent a lot of time on networking, there were some articles about IO, including the understanding of socket read on different layers (Chen, 2014k), mobile networking and architecture (Chen, 2013j, 2014l), understanding of Java IO (Chen, 2009h, 2014c, 2015a), load testing of IO (Chen, 2014m). Some articles were about Facebook Thrift, including load testing by the disruptor nio (Chen, 2014b), the usage of Thrift in Cassandra (Chen, 2013g), the version upgrade of early Thrift (Chen, 2014h), load testing by Resin and Thrift (Chen, 2013h), and the quick start of Thrift (Chen, 2011g, 2011h).

In the instant messaging domain, I focused on the access layer. There were some articles about protocols such as Bosh, Comet, Long polling (Chen, 2014a). I researched the Java version of XMPP implementation named Tigase (Chen, 2014i, 2014j).

Scala played an important role in distributed systems in a particular period, so there were a series of articles about it. For example, the learning of Scala (Chen, 2013i). Akka was the Actor model designed by Scala, which could be used online by Java (Chen, 2014d, 2014e, 2014f, 2014g).

In the period of AI, the articles about AI were also very useful. There was an example of using Keras and tensorflow to control the payment risk (Chen, 2017c). There were an article about basic knowledge such as Optimizers, Activation (Chen, 2017b) and the learning of Caffe (Chen, 2017a).

About the team management and entire architecture, there were some articles. This was an article about the team objective and OKR (Chen, 2019). Because micro-service architecture was popular, these articles were about it (Chen, 2018a, 2018b, 2018c).

6 总结 Conclusion

还有很多零碎有用的内容没有在这里一一进行总结, 比如说怎么在北京生孩子之类的 (Chen, 2017d), 像这篇对区块链的研究 (Chen, 2018d), 研究信息可视化的结果 (Chen, 2021), 技术之余, 这些知识都对个人的生活影响比较大, 觉得对大家会有用处, 于是也做了记录。

以上精选纯为个人归总, 也许有有用的文章并未并归纳进来, 个人视野有限, 如有想添加的请查找公众号 java_scala。

以上内容, 能力有限, 如有缺陷, 万望指出。

There are still some useful articles which are not shown here. For example, this article explained how to born a child in Beijing (Chen, 2017d), this article explained the blockchain (Chen, 2018d), this article is the research result of information visualisation (Chen, 2021). All of these contents were useful in common life.

The above recommendations are up to me. It is clear that my mind is limited and if you have any ideas about that, you can contact me by the Wechat Official Account: java_scala.

Any suggestions about this file would be appreciated!

References

- Chen, Z. (2005). *Mysql* 作要点整理 - 五四陈科学院. <https://www.54chen.com/blog/2005/11/01/mysql-finishing-operation-points/>
- Chen, Z. (2006a). *Apache* 常用设置 - 五四陈科学院. <https://www.54chen.com/blog/2006/10/23/apache-common-set/>
- Chen, Z. (2006b). *Intel* 汇编与 *at* & *t* 的区别 - 五四陈科学院. <https://www.54chen.com/blog/2006/10/26/intel-compile-the-difference-between-at-u0026amp-t/>
- Chen, Z. (2006c). *Linux c* 获取机器 *mac* 及 *ip* 的两个函数 - 五四陈科学院. <https://www.54chen.com/blog/2006/10/25/linux-c-to-obtain-the-machine-mac-and-ip-2-functions/>
- Chen, Z. (2006d). *Linux* 下系统托盘的实现 - 五四陈科学院. <https://www.54chen.com/blog/2006/10/13/linux-system-tray-under-the-realization-of/>
- Chen, Z. (2006e). *Mysql* 中各种字段的取值范围 - 五四陈科学院. <https://www.54chen.com/blog/2006/03/22/mysql-in-a-variety-of-fields-in-the-range/>
- Chen, Z. (2006f). *Nfs* 使用记录 - 五四陈科学院. <https://www.54chen.com/blog/2006/11/17/nfs-usage-records/>
- Chen, Z. (2006g). *Tcp* 连接:*syn ack rst utg psh fin* - 五四陈科学院. <https://www.54chen.com/blog/2007/09/29/tcp-connection-syn-ack-rst-utg-psh-fin/>
- Chen, Z. (2007a). *Liteim/freeplus* 的取 *ip* 代码 - 五四陈科学院. <https://www.54chen.com/blog/2007/10/29/liteim-freeplusu002639s-get-ip-code/>
- Chen, Z. (2007b). 大学生创业案例分析讲稿整理 - 五四陈科学院. <https://www.54chen.com/blog/2007/12/28/students-finishing-business-case-analysis-script/>
- Chen, Z. (2008a). [中秋零献] 神州数码 802.1x 局域网 *udp* 拨号软件 *mynet-gnome* 源代码大分析 (*part1*) - 五四陈科学院. <https://www.54chen.com/blog/2008/09/14/%E4%B8%AD%E7%A7%8B%E9%9B%B6%E7%8C%AE%E7%A5%9E%E5%B7%9E%E6%95%B0%E7%A0%818021x%E5%B1%80%E5%9F%9F%E7%BD%91udp%E6%8B%94%E5%8F%B7%E8%BD%AF%E4%BB%B6mynet-gnome%E6%BA%90%E4%BB%A3%E7%A0%81%E5%A4%A7/>
- Chen, Z. (2008b). [中秋零献] 神州数码 802.1x 局域网 *udp* 拨号软件 *mynet-gnome* 源代码大分析 (*part2*) - 五四陈科学院. <https://www.54chen.com/blog/2008/09/14/%E4%B8%AD%E7%A7%8B%E9%9B%B6%E7%8C%AE%E7%A5%9E%E5%B7%9E%E6%95%B0%E7%A0%818021x%E5%B1%80%E5%9F%9F%E7%BD%91udp%E6%8B%94%E5%8F%B7%E8%BD%AF%E4%BB%B6mynet-gnome%E6%BA%90%E4%BB%A3%E7%A0%81%E5%A4%A7-2/>
- Chen, Z. (2008c). [中秋零献] 神州数码 802.1x 局域网 *udp* 拨号软件 *mynet-gnome* 源代码大分析 (*part3*) 关键逻辑 - 五四陈科学院. <https://www.54chen.com/blog/2008/09/14/%E4%B8%AD%E7%A7%8B%E9%9B%B6%E7%8C%AE%E7%A5%9E%E5%B7%9E%E6%95%B0%E7%A0%818021x%E5%B1%80%E5%9F%9F%E7%BD%91udp%E6%8B%94%E5%8F%B7%E8%BD%AF%E4%BB%B6mynet-gnome%E6%BA%90%E4%BB%A3%E7%A0%81%E5%A4%A7-3/>
- Chen, Z. (2008d). [中秋零献续集] 神州数码 802.1x 局域网 *udp* 拨号软件 *mynet-gnome* 源代码大分析 (*part4*) *getaccess* 线程内的故事 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/01/%E4%B8%AD%E7%A7%8B%E9%9B%B6%E7%8C%AE%E7%BB%AD%E9%9B%86-%E7%A5%9E%E5%B7%9E%E6%95%B0%E7%A0%818021x%E5%B1%80%E5%9F%9F%E7%BD%91udp%E6%8B%94%E5%8F%B7%E8%BD%AF%E4%BB%B6mynet-gnome%E6%BA%90%E4%BB%A3/>
- Chen, Z. (2008e). [讨论] 从互联网社区发展看学校 *bbs* - 五四陈科学院. <https://www.54chen.com/blog/2008/03/15/discuss-community-development-from-the-internet-to-see-the-school-bbs/>
- Chen, Z. (2008f). *TSRMLS_CC* - . https://www.54chen.com/blog/2008/12/03/what-is-tsrmis_cc/
- Chen, Z. (2008g). *Berkeley db* 参考文档 - 五四陈科学院. <https://www.54chen.com/blog/2008/12/10/berkeley-db%E5%8F%82%E8%80%83%E6%96%87%E6%A1%A3/>

- Chen, Z. (2008h). *Extern-c/c++* 语言中表明函数和全局变量作用范围 - 五四陈科学院. <https://www.54chen.com/blog/2008/02/21/extern-c-c-language-that-functions-and-global-variables-scope/>
- Chen, Z. (2008i). *Jquery* 的 n 个插件 - 五四陈科学院. <https://www.54chen.com/blog/2008/03/09/jquery-plug-n/>
- Chen, Z. (2008j). *Perl* 笔记 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/05/perl%E7%AC%94%E8%AE%B0/>
- Chen, Z. (2008k). *Pgpool* 安装 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/21/pgpool%E5%AE%89%E8%A3%85/>
- Chen, Z. (2008l). *Pgsql* 如何控制来自其他电脑的连接? - 五四陈科学院. <https://www.54chen.com/blog/2008/11/21/pgsql%E5%A6%82%E4%BD%95%E6%8E%A7%E5%88%B6%E6%9D%A5%E8%87%AA%E5%85%B6%E4%BB%96%E7%94%B5%E8%84%91%E7%9A%84%E8%BF%9E%E6%8E%A5%EF%BC%9F/>
- Chen, Z. (2008m). *Php*“收发”邮件的一个程序 - 五四陈科学院. <https://www.54chen.com/blog/2008/08/22/php-send-and-receive-the-message/>
- Chen, Z. (2008n). *Php* 代码的优与劣 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/27/php%E4%BB%A3%E7%A0%81%E7%9A%84%E4%BC%98%E4%B8%8E%E5%8A%A3/>
- Chen, Z. (2008o). *Plproxy* 部署手册 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/21/plproxy%E9%83%A8%E7%BD%B2%E6%89%8B%E5%86%8C/>
- Chen, Z. (2008p). *Postgresql* 系统安装 (*linux*) - 五四陈科学院. <https://www.54chen.com/blog/2008/11/21/postgresql%E7%B3%BB%E7%BB%9F%E5%AE%89%E8%A3%85linux/>
- Chen, Z. (2008q). *Sscanf* 函数的各种用法 - 五四陈科学院. <https://www.54chen.com/blog/2008/12/02/sscanf%E5%87%BD%E6%95%B0%E7%9A%84%E5%90%84%E7%A7%8D%E7%94%A8%E6%B3%95/>
- Chen, Z. (2008r). 一种在 *sns* 系统中统一应用平台的方式 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/18/%E4%B8%80%E7%A7%8D%E5%9C%A8sns%E7%B3%BB%E7%BB%9F%E4%B8%AD%E7%BB%9F%E4%B8%80%E5%BA%94%E7%94%A8%E5%B9%B3%E5%8F%B0%E7%9A%84%E6%96%B9%E5%BC%8F/>
- Chen, Z. (2008s). 使用 *plproxy* 和 *pgbouncer* 完成分布式处理 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/21/%E4%BD%BF%E7%94%A8plproxy%E5%92%8Cpgbouncer%E5%AE%8C%E6%88%90%E5%88%86%E5%B8%83%E5%BC%8F%E5%A4%84%E7%90%86/>
- Chen, Z. (2008t). 公开了 *bbsdown* 的源代码下载 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/23/%E5%85%AC%E5%BC%80%E4%BA%86bbsdown%E7%9A%84%E6%BA%90%E4%BB%A3%E7%A0%81%E4%B8%8B%E8%BD%BD/>
- Chen, Z. (2008u). 当 *pg* 连接数达到一定数量时, *pgsql* 进程会终止, 报 *out of memory* - 五四陈科学院. <https://www.54chen.com/blog/2008/11/21/%E5%BD%93pg%E8%BF%9E%E6%8E%A5%E6%95%B0%E8%BE%BE%E5%88%B0%E4%B8%80%E5%AE%9A%E6%95%B0%E9%87%8F%E6%97%B6%EF%BC%8Cpgsql%E8%BF%9B%E7%A8%8B%E4%BC%9A%E7%BB%88%E6%AD%A2%EF%BC%8C%E6%8A%A5out-of-memory/>
- Chen, Z. (2008v). 普及帖: *linux* 下编译 *c* 程序 - 五四陈科学院. <https://www.54chen.com/blog/2008/12/19/%E6%99%AE%E5%8F%8A%E5%B8%96%EF%BC%9Alinux-%E4%B8%8B%E7%BC%96%E8%AF%91c%E7%A8%8B%E5%BA%8F/>
- Chen, Z. (2008w). 智能 *dns* 配置过程 - 五四陈科学院. <https://www.54chen.com/blog/2008/07/28/intelligent-dns-configuration-process/>
- Chen, Z. (2008x). 用 *ssh tunnel* 临时突破跨机房的限制 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/20/the-temporary-break-with-the-ssh-tunnel-restriction-cross-room/>
- Chen, Z. (2008y). 百度 *hi* 通讯协议抓包分析 - 五四陈科学院. <https://www.54chen.com/blog/2008/04/01/baidu-hi-ethereal-protocol-analysis/>
- Chen, Z. (2008z). 著名网站架构设计 - 五四陈科学院. <https://www.54chen.com/blog/2008/11/27/%E8%91%97%E5%90%8D%E7%BD%91%E7%AB%99%E6%9E%B6%E6%9E%84%E8%AE%BE%E8%AE%A1/>

- Chen, Z. (2009a). [原创][整理] 校内网 *cto* 晶讲述网站架构变迁-54chen 回忆版 - 五四陈科学院. <https://www.54chen.com/blog/2009/04/13/%E5%8E%9F%E5%88%9B%E6%95%B4%E7%90%86%E6%A0%A1%E5%86%85%E7%BD%91cto%E9%BB%84%E6%99%B6%E8%AE%B2%E8%BF%B0%E7%BD%91%E7%AB%99%E6%9E%B6%E6%9E%84%E5%8F%98%E8%BF%81-54chen%E5%9B%9E%E5%BF%86%E7%89%88/>
- Chen, Z. (2009b). [原创]discuz! *bbs* 缓存整体方案 - 五四陈科学院. <https://www.54chen.com/blog/2009/06/22/%E5%8E%9F%E5%88%9Bdiscuz-bbs%E7%BC%93%E5%AD%98%E6%95%B4%E4%BD%93%E6%96%B9%E6%A1%88/>
- Chen, Z. (2009c). [原创]mediawiki 安装改进手记-使用 *mediawikit* 和 *postgresql* 搭建有强大搜索功能的 *wiki* - 五四陈科学院. <https://www.54chen.com/blog/2009/07/21/mediawiki-pgsql/>
- Chen, Z. (2009d). [原创] 使用 *postgresql+bamboo* 搭建比 *lucene* 方便 *n* 倍的全文搜索第一部分 - 五四陈科学院. <https://www.54chen.com/blog/2009/07/01/postgresql-bamboo-lucene-fulltextindex/>
- Chen, Z. (2009e). [原创] 使用 *postgresql+bamboo* 搭建比 *lucene* 方便 *n* 倍的全文搜索第二部分 - 五四陈科学院. <https://www.54chen.com/blog/2009/07/17/postgresql-bamboo-lucene-part2/>
- Chen, Z. (2009f). *51ditu* 等网站技术揭秘-利用开源框架搭建一整套的 *webgis* - 五四陈科学院. <https://www.54chen.com/blog/2009/01/08/51ditu-webgis-postgresql-postregis/>
- Chen, Z. (2009g). *Java list* 转 *byte[]* 的方法 - 五四陈科学院. <https://www.54chen.com/blog/2009/12/08/java-list-transferred-byte-method/>
- Chen, Z. (2009h). *Java nio* 学习手记 [收集] - 五四陈科学院. <https://www.54chen.com/blog/2009/11/06/notes-from-java-nio-to-learn-to-collect/>
- Chen, Z. (2009i). *Java* 使用 *bdb* 手记 (*berkeley db java api* 记录) - 五四陈科学院. <https://www.54chen.com/blog/2009/08/25/java-using-the-bdb-notes-from-berkeley-db-java-api-records/>
- Chen, Z. (2009j). *Linkin* 基于 *dynamo* 设计的系统: 伏地魔 (*voldemort*) 设计中文文档 [我是陈科学院译]-完稿 - 五四陈科学院. <https://www.54chen.com/blog/2009/08/23/dynamo-based-systems/>
- Chen, Z. (2009k). *Php java c* 上传文件如何准确判断文件类型 - *mime* 知识普及 - 五四陈科学院. <https://www.54chen.com/blog/2009/12/14/php-java-c-upload-files-how-to-accurately-determine-the-file-type-mime-literacy/>
- Chen, Z. (2009l). *Yahoo*、*taobao* 云计算利器之“云”端的小飞象—*hadoop* - 五四陈科学院. <https://www.54chen.com/blog/2009/01/15/yahoo%E3%80%81tao%E4%BA%91%E8%AE%A1%E7%AE%97%E5%88%A9%E5%99%A8%E4%B9%8B%E2%80%9C%E4%BA%91%E2%80%9D%E7%AB%AF%E7%9A%84%E5%B0%8F%E9%A3%9E%E8%B1%A1%E2%80%94hadoop/>
- Chen, Z. (2009m). 为人人设计的分布式 *key-value* 系统架构 [原创] - 五四陈科学院. <https://www.54chen.com/blog/2009/08/09/design-for-all-key-value-of-the-distributed-system-architecture-original/>
- Chen, Z. (2009n). 人人网内部培训: *java* 并发编程原理-*synchronize volatile*-张洁大侠 - 五四陈科学院. <https://www.54chen.com/blog/2009/11/11/all-networks-in-house-training-java-concurrent-programming-principles-synchronize-volatile-zhang-jie-heroes/>
- Chen, Z. (2009o). 内部培训-*memcached* 协议详解 [原创][总结] - 五四陈科学院. <https://www.54chen.com/blog/2009/05/12/%E5%86%85%E9%83%A8%E5%9F%B9%E8%AE%AD-memcached%E5%8D%8F%E8%AE%AE%E8%AF%A6%E8%A7%A3%E5%8E%9F%E5%88%9B%E6%80%BB%E7%BB%93/>
- Chen, Z. (2009p). 手机之家新系统介绍及架构分享 - 五四陈科学院. <https://www.54chen.com/blog/2009/03/30/%E6%89%8B%E6%9C%BA%E4%B9%8B%E5%AE%B6%E6%96%B0%E7%B3%BB%E7%BB%9F%E4%BB%8B%E7%BB%8D%E5%8F%8A%E6%9E%B6%E6%9E%84%E5%88%86%E4%BA%AB/>
- Chen, Z. (2009q). 用 *iptables* 做两机之间的端口转发 - 五四陈科学院. <https://www.54chen.com/blog/2009/02/19/%E7%94%A8iptables%E5%81%9A%E4%B8%A4%E6%9C%BA%E4%B9%8B%E9%97%B4%E7%9A%84%E7%AB%AF%E5%8F%A3%E8%BD%AC%E5%8F%91/>

- Chen, Z. (2009r). 用 *java* 并发测试 *tokyo cabinet* 的性能 [五四陈手记] - 五四陈科学院. <https://www.54chen.com/blog/2009/09/03/tokyo-cabinet-with-java-concurrent-test-the-performance/>
- Chen, Z. (2009s). 类似 *big table* 的 *tokyo cabinet* 研究记录 - 五四陈科学院. <https://www.54chen.com/blog/2009/07/30/-big-table-similar-to-the-tokyo-cabinet-research-notes/>
- Chen, Z. (2009t). 轻点魔棒，瞬间安装上百台服务器 - 五四陈科学院. <https://www.54chen.com/blog/2009/01/06/%E8%BD%BB%E7%82%B9%E9%AD%94%E6%A3%92%EF%BC%8C%E7%9E%AC%E9%97%B4%E5%AE%89%E8%A3%85%E4%B8%8A%E7%99%BE%E5%8F%B0%E6%9C%8D%E5%8A%A1%E5%99%A8/>
- Chen, Z. (2010a). *Java* 线程控制器代码分享-根据 *cpu* 情况决定线程运行数量和情况 - 五四陈科学院. <https://www.54chen.com/blog/2010/02/02/java-thread-controller-code-sharing-according-to-cpu-circumstances-decide-the-number-and-circumstances-of-the-threads-running/>
- Chen, Z. (2010b). *Jdbc socketread0 locked* 记一个 *mysql* 的不明 *bug* - 五四陈科学院. <https://www.54chen.com/blog/2010/01/07/jdbc-socketread0-locked-in-mind-a-mysql-unknown-bug/>
- Chen, Z. (2010c). *Sphinx* 安装配置手记 (中文分词 *54chen* 支持版) - 五四陈科学院. <https://www.54chen.com/blog/2010/07/29/sphinx-install-and-configure-notes/>
- Chen, Z. (2010d). 一条 *sql* 引发的对 *order by* 的思考 - 五四陈科学院. <https://www.54chen.com/blog/2010/07/06/triggered-by-a-sql-order-by-the-thoughts-on/>
- Chen, Z. (2010e). 国内互联网公司数据库访问层调查 - 五四陈科学院. <https://www.54chen.com/blog/2010/10/20/china-internet-db-report/>
- Chen, Z. (2010f). 海纳百川——人人网海量存储系统 *nuclear* 开发手记 - 五四陈科学院. <https://www.54chen.com/blog/2010/10/27/renren-nuclear/>
- Chen, Z. (2010g). 用 *java* 作 *bdb* 的方法记录二 - 五四陈科学院. <https://www.54chen.com/blog/2010/02/20/bdb-method-of-operation-with-the-java-record-2/>
- Chen, Z. (2010h). 用 *sphinx* 快速搭建站内搜索功能 - 五四陈科学院. <https://www.54chen.com/blog/2010/06/22/sphinx-build-stations-with-fast-search-function/>
- Chen, Z. (2010i). 用 *sphinx* 轻松搞定方便管理的多节点过亿级数据搜索 - 五四陈科学院. <https://www.54chen.com/blog/2010/07/14/sphinx-data-search/>
- Chen, Z. (2010j). 用搜索的倒排轻松搞定“好友的文章”类相关推荐功能 - 五四陈科学院. <https://www.54chen.com/blog/2010/09/06/search-friends-airticle-function/>
- Chen, Z. (2010k). 由 *php* 的 *call_user_func* 传 *reference* 引发的思考 - 五四陈科学院. https://www.54chen.com/blog/2010/07/20/php-call_user_func-reference-thinking/
- Chen, Z. (2010l). 闲谈分布式 *key-value* 存储服务 *nuclear* 及其他 - 五四陈科学院. <https://www.54chen.com/blog/2010/03/27/distributed-key-value-storage/>
- Chen, Z. (2011a). *Erlang* 学习手记 - 五四陈科学院. <https://www.54chen.com/blog/2011/04/26/erlang-notes/>
- Chen, Z. (2011b). *Riak 1.0.2* 安装手记 - 五四陈科学院. <https://www.54chen.com/blog/2011/12/21/riak-1-0-2-install/>
- Chen, Z. (2011c). *Riak* 源码阅读手记压力测试 - 五四陈科学院. <https://www.54chen.com/blog/2011/09/15/riak-benchmark/>
- Chen, Z. (2011d). *Riak* 源码阅读手记运行安装 - 五四陈科学院. <https://www.54chen.com/blog/2011/09/09/riak-source-install-run/>
- Chen, Z. (2011e). *Riak* 源码阅读手记一初出茅庐项目入口 - 五四陈科学院. <https://www.54chen.com/blog/2011/08/22/riak-source/>
- Chen, Z. (2011f). *Riak* 源码阅读手记二左右开弓启动 - 五四陈科学院. <https://www.54chen.com/blog/2011/08/24/riak-cource-code/>
- Chen, Z. (2011g). *Thrift* 快速入门实例 - 五四陈科学院. <https://www.54chen.com/blog/2011/11/18/thrift-quick-start/>
- Chen, Z. (2011h). *Thrift* 最佳实践: 版本与兼容 - 五四陈科学院. <https://www.54chen.com/blog/2011/09/28/thrift-versioning-compatibility/>
- Chen, Z. (2011i). 年终攻击 *hashdos*-哈希表多碰撞实现拒绝服务-破解办法 - 五四陈科学院. <https://www.54chen.com/blog/2011/12/30/hashdos/>

- Chen, Z. (2011j). 淘宝分布式数据库系统 *oceanbase* 观后闲话小记 - 五四陈科学院. <https://www.54chen.com/blog/2011/09/01/taobao-oceanbase-intro/>
- Chen, Z. (2012a). *Cloud foundry - how to bootstrap a system in centos6* - 五四陈科学院. <https://www.54chen.com/blog/2012/10/25/cloud-foundry-how-to-bootstrap-a-system-in-centos6/>
- Chen, Z. (2012b). *Cloud foundry 之 cloud_controller 代码解读* - 五四陈科学院. https://www.54chen.com/blog/2012/08/30/cloud-foundry-cloud_controller/
- Chen, Z. (2012c). *Cloud foundry 之 dea 代码解读* - 五四陈科学院. <https://www.54chen.com/blog/2012/09/07/cloud-foundry-dea/>
- Chen, Z. (2012d). *Cloud foundry 之 router 代码解读* - 五四陈科学院. <https://www.54chen.com/blog/2012/09/06/cloud-foundry-router/>
- Chen, Z. (2012e). *Cloud foundry 之 vmc 代码解读* - 五四陈科学院. <https://www.54chen.com/blog/2012/08/29/cloud-foundry-vmc/>
- Chen, Z. (2012f). *Cloud foundry 之 warden 代码解读-part1* - 五四陈科学院. <https://www.54chen.com/blog/2012/09/14/cloud-foundry-warden-part1/>
- Chen, Z. (2012g). *Cloud foundry 之 warden 代码解读-part2* - 五四陈科学院. <https://www.54chen.com/blog/2012/10/09/cloud-foundry-warden-part2/>
- Chen, Z. (2012h). *Cloud foundry 之 warden 代码解读-part3* - 五四陈科学院. <https://www.54chen.com/blog/2012/10/12/cloud-foundry-warden-part3/>
- Chen, Z. (2012i). *Nginx 防 hashdos 模块释出* - 五四陈科学院. <https://www.54chen.com/blog/2012/01/06/nginx-hashdos-module/>
- Chen, Z. (2012j). *Riak core 说明* - 五四陈科学院. <https://www.54chen.com/blog/2012/02/01/riak-core/>
- Chen, Z. (2012k). *Rose 手册第一章：入门指引* - 五四陈科学院. <https://www.54chen.com/blog/2012/03/30/rose-manual-1/>
- Chen, Z. (2012l). *Rose 手册第三章 a 节：dao 层：dao 的基本配置与使用* - 五四陈科学院. <https://www.54chen.com/blog/2012/06/27/rose-3-a/>
- Chen, Z. (2012m). *Rose 手册第三章 b 节：dao 层：dao 进阶：sqlparm 支持和表达式 sql* - 五四陈科学院. <https://www.54chen.com/blog/2012/07/05/rose-3-b/>
- Chen, Z. (2012n). *Rose 手册第三章 c 节：dao 层：分表设置* - 五四陈科学院. <https://www.54chen.com/blog/2012/07/11/rose-3-c/>
- Chen, Z. (2012o). *Rose 手册第三章一节：controller 层：url 对照规则与返回结果规则* - 五四陈科学院. <https://www.54chen.com/blog/2012/04/24/rose-3-1/>
- Chen, Z. (2012p). *Rose 手册第三章七节：controller 层：门户必备 portal 支持* - 五四陈科学院. <https://www.54chen.com/blog/2012/06/07/rose-3-7/>
- Chen, Z. (2012q). *Rose 手册第三章三节：controller 层：errorhandler 支持* - 五四陈科学院. <https://www.54chen.com/blog/2012/05/16/rose-3-3/>
- Chen, Z. (2012r). *Rose 手册第三章九节：controller 层：上传文件* - 五四陈科学院. <https://www.54chen.com/blog/2012/06/18/rose-3-9/>
- Chen, Z. (2012s). *Rose 手册第三章二节：controller 层：拦截器支持* - 五四陈科学院. <https://www.54chen.com/blog/2012/05/04/rose-3-2/>
- Chen, Z. (2012t). *Rose 手册第三章五节：controller 层：统一的参数验证办法* - 五四陈科学院. <https://www.54chen.com/blog/2012/05/24/rose-3-5/>
- Chen, Z. (2012u). *Rose 手册第三章八节：controller 层：门户必备 pipe 支持* - 五四陈科学院. <https://www.54chen.com/blog/2012/06/15/rose-3-8/>
- Chen, Z. (2012v). *Rose 手册第三章六节：controller 层：一闪而过的信息，flash 支持* - 五四陈科学院. <https://www.54chen.com/blog/2012/05/29/rose-3-6/>
- Chen, Z. (2012w). *Rose 手册第三章四节：controller 层：自定义 http 参数支持* - 五四陈科学院. <https://www.54chen.com/blog/2012/05/19/rose-3-4/>
- Chen, Z. (2012x). *Rose 手册第二章：配置与使用* - 五四陈科学院. <https://www.54chen.com/blog/2012/04/10/rose-manual-2/>
- Chen, Z. (2012y). *Ruby 快速学习手记 (ubuntu)* - 五四陈科学院. <https://www.54chen.com/blog/2012/08/28/learn-ruby-ubuntu/>
- Chen, Z. (2012z). *人肉解析 riak_admin join* - 五四陈科学院. https://www.54chen.com/blog/2012/02/10/riak_admin-join/
- Chen, Z. (2013a). *Arduino - 各种无线方案的对比* - 五四陈科学院. <https://www.54chen.com/blog/2013/08/08/open-hard/>

- Chen, Z. (2013b). *Arduino-蓝牙各种版本类型及费用对比* - 五四陈科学院. <https://www.54chen.com/blog/2013/08/13/arduino-bl/>
- Chen, Z. (2013c). *Arduino 学习手记一：基础知识* - 五四陈科学院. <https://www.54chen.com/blog/2013/07/02/arduino-starter-1/>
- Chen, Z. (2013d). *Arduino 学习手记二：写程序控制灯控制蜂鸣器红外* - 五四陈科学院. <https://www.54chen.com/blog/2013/07/03/arduino-starter-2-led/>
- Chen, Z. (2013e). *Arduino 学习手记四：串行编程* - 五四陈科学院. <https://www.54chen.com/blog/2013/07/06/arduino-starter-4/>
- Chen, Z. (2013f). *Bluno 试用手记* - 五四陈科学院. <https://www.54chen.com/blog/2013/11/30/bluno/>
- Chen, Z. (2013g). *Cassandra 的 thrift 用法学习手记* - 五四陈科学院. <https://www.54chen.com/blog/2013/12/30/cassandra-thrift/>
- Chen, Z. (2013h). *Resin+thrift 压力测试报告* - 五四陈科学院. <https://www.54chen.com/blog/2013/02/06/resin-thrift-benchmark/>
- Chen, Z. (2013i). *Scala 入门手记* - 五四陈科学院. <https://www.54chen.com/blog/2013/01/14/scala-notes/>
- Chen, Z. (2013j). *移动互联网系统架构十大陷阱* - 五四陈科学院. <https://www.54chen.com/blog/2013/10/17/mi-trap/>
- Chen, Z. (2014a). *Bosh vs comet vs long polling vs polling* - 五四陈科学院. <https://www.54chen.com/blog/2014/06/30/bosh-vs-comet-vs-long-polling-vs-polling/>
- Chen, Z. (2014b). *Disruptor thrift server 连接参数与 rps 数值影响记录* - 五四陈科学院. <https://www.54chen.com/blog/2014/01/22/disruptor-thrift-server-link-param-rps/>
- Chen, Z. (2014c). *Io 不再神秘* - 五四陈科学院. <https://www.54chen.com/blog/2014/03/12/io-demystified/>
- Chen, Z. (2014d). *Java 中使用 akka 手记一* - 五四陈科学院. <https://www.54chen.com/blog/2014/04/14/how-to-use-akka-in-java/>
- Chen, Z. (2014e). *Java 中使用 akka 手记三 cluster 详例* - 五四陈科学院. <https://www.54chen.com/blog/2014/04/17/how-to-use-akka-in-java-3/>
- Chen, Z. (2014f). *Java 中使用 akka 手记二 cluster* - 五四陈科学院. <https://www.54chen.com/blog/2014/04/16/how-to-use-akka-in-java-2/>
- Chen, Z. (2014g). *Java 中使用 akka 手记四用法速查* - 五四陈科学院. <https://www.54chen.com/blog/2014/04/18/how-to-use-akka-in-java-4/>
- Chen, Z. (2014h). *Thrift 版本升级调查记录* - 五四陈科学院. <https://www.54chen.com/blog/2014/05/28/thrift-upgrade/>
- Chen, Z. (2014i). *Tigase 代码框架解读* - 五四陈科学院. <https://www.54chen.com/blog/2014/07/07/explain-tigase/>
- Chen, Z. (2014j). *Tigase 网络核心 sockthread 详解* - 五四陈科学院. <https://www.54chen.com/blog/2014/07/09/tigase-sockthread/>
- Chen, Z. (2014k). *有关 socket read* - 五四陈科学院. <https://www.54chen.com/blog/2014/11/18/about-socket-read/>
- Chen, Z. (2014l). *移动网络下连接的秘密* - 五四陈科学院. <https://www.54chen.com/blog/2014/07/31/connection-secret-in-mobile/>
- Chen, Z. (2014m). *网络 io 型程序压力测试要点* - 五四陈科学院. <https://www.54chen.com/blog/2014/11/04/network-load-test/>
- Chen, Z. (2015a). *Java io 在各版本中的提高* - 五四陈科学院. <https://www.54chen.com/blog/2015/02/04/enhancements-in-java-io/>
- Chen, Z. (2015b). *Mac 下更新 gcc 版本* - 五四陈科学院. <https://www.54chen.com/blog/2015/03/04/update-gcc-version-in-mac/>
- Chen, Z. (2016a). *C++ protobuf 中 set_allocated 引起的 double free core dump* - 五四陈科学院. <https://www.54chen.com/blog/2016/03/24/protobuf-double-free/>
- Chen, Z. (2016b). *在 c/c++ 中解决 sha1withrsa/x509 的过程记录* - 五四陈科学院. <https://www.54chen.com/blog/2016/05/25/a-story-about-sha1withrsa-slash-ras-slash-x509-with-c-slash-c-plus-plus/>
- Chen, Z. (2016c). *小米大树 part1: 基础架构之痛* - 五四陈科学院. <https://www.54chen.com/blog/2016/07/29/mi/>

- Chen, Z. (2016d). 小米大树 *part1.5*: 基础架构之痛答疑 - 五四陈科学院. <https://www.54chen.com/blog/2016/08/01/mi1-dot-5/>
- Chen, Z. (2016e). 小米大树 *part2*: 测试之痛 - 五四陈科学院. <https://www.54chen.com/blog/2016/08/06/mi2/>
- Chen, Z. (2016f). 小米大树 *part3*: 产品进度之痛 - 五四陈科学院. <https://www.54chen.com/blog/2016/11/22/mi3/>
- Chen, Z. (2016g). 过去六年在小米搞 (wa) 错 (keng) 的几个技术细节 - 五四陈科学院. <https://www.54chen.com/blog/2016/04/26/mistake-in-six-years/>
- Chen, Z. (2017a). *How to install caffe 1.0 with anaconda python3 on centos7* - 五四陈科学院. <https://www.54chen.com/blog/2017/07/04/how-to-build-caffe-1-dot-0-with-anaconda-python3/>
- Chen, Z. (2017b). 优化器、激活函数、评价函数 - 五四陈科学院. <https://www.54chen.com/blog/2017/05/19/optimizer/>
- Chen, Z. (2017c). 利用深度学习解决直播支付风控 - 五四陈科学院. <https://www.54chen.com/blog/2017/02/09/deeplearning/>
- Chen, Z. (2017d). 生娃指北 - 五四陈科学院. <https://www.54chen.com/blog/2017/07/14/born-in-beijing/>
- Chen, Z. (2018a). *Envoy* 线程模型. <http://blog.54chen.com/post/envoy-threading-model/>
- Chen, Z. (2018b). 关于现代网络负载均衡和代理. <http://blog.54chen.com/post/load-balance/>
- Chen, Z. (2018c). 微服务架构的十个劣势. <http://blog.54chen.com/post/micro-service/>
- Chen, Z. (2018d). 靠写代码学习什么是区块链. <http://blog.54chen.com/post/blockchain/>
- Chen, Z. (2019). 目标管理和 *okr* 实施. <http://blog.54chen.com/post/okr/>
- Chen, Z. (2021). *Overview of hamilton primary schools*. <http://blog.54chen.com/post/overview-of-hamilton-primary-schools/>