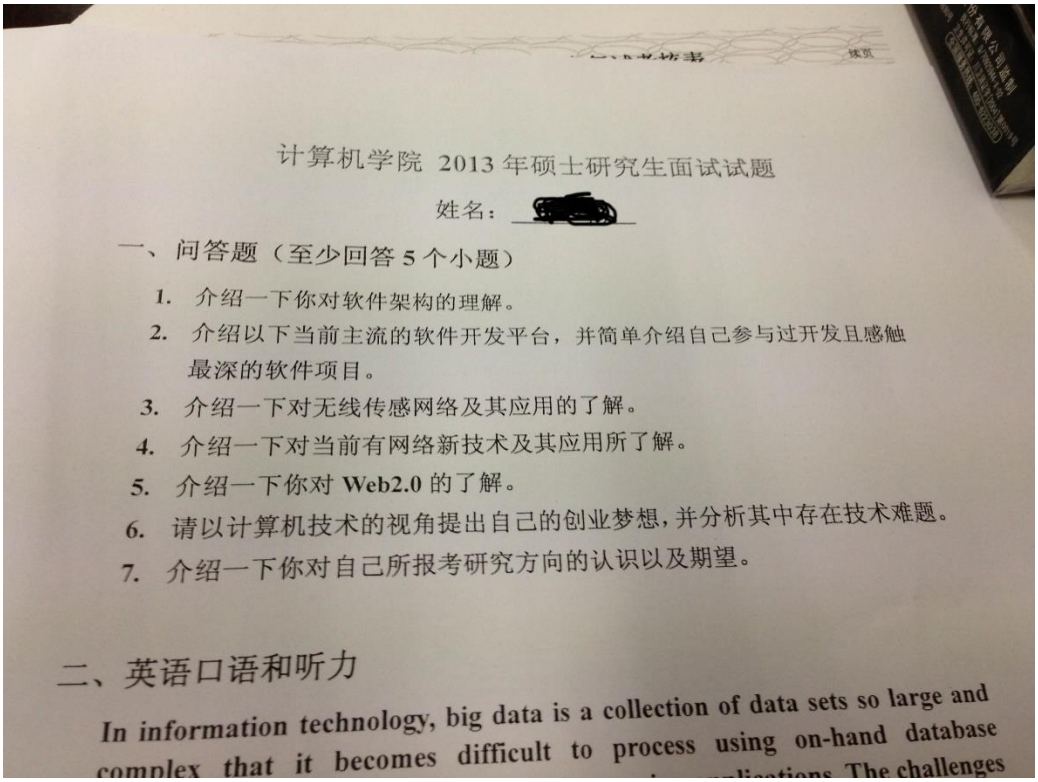


计算机学院 2013 年硕士研究生面试试题

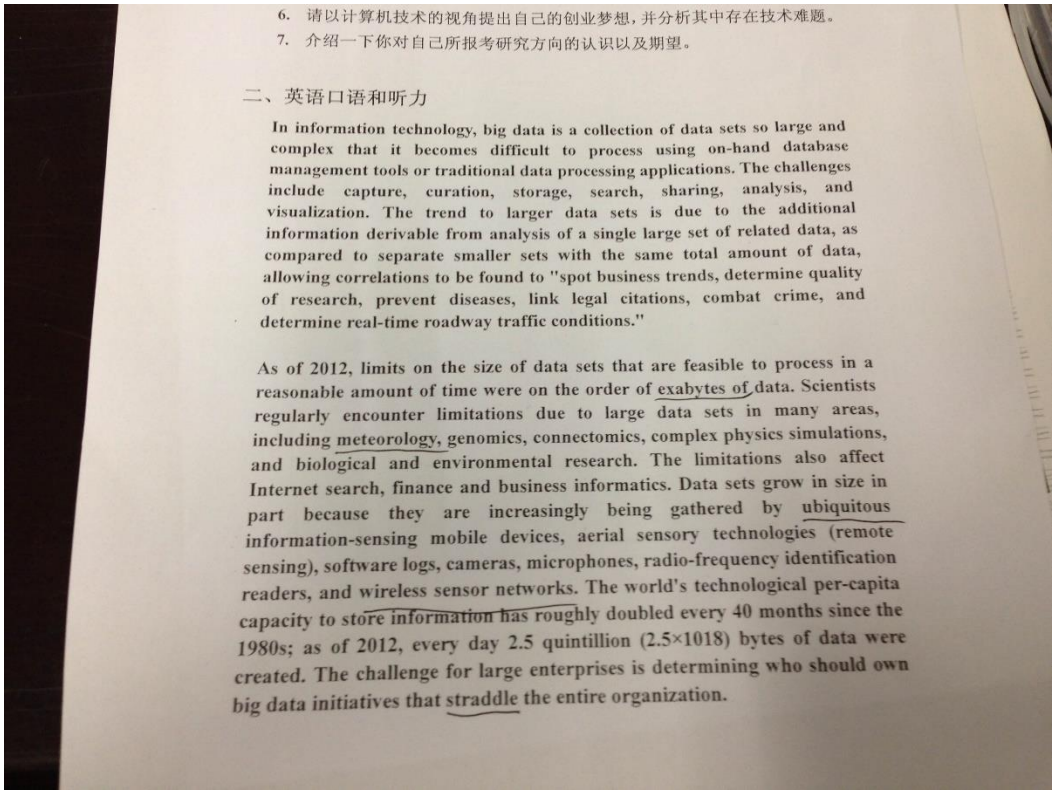
姓名：[redacted]

一、问答题（至少回答 5 个小题）

1. 介绍一下你对软件架构的理解。
2. 介绍以下当前主流的软件开发平台，并简单介绍自己参与过开发且感触最深的软件项目。
3. 介绍一下对无线传感网络及其应用的了解。
4. 介绍一下对当前有网络新技术及其应用所了解。
5. 介绍一下你对 Web2.0 的了解。
6. 请以计算机技术的视角提出自己的创业梦想，并分析其中存在技术难题。
7. 介绍一下你对自己所报考研究方向的认识以及期望。

二、英语口语和听力

In information technology, big data is a collection of data sets so large and complex that it becomes difficult to process using on-hand database



6. 请以计算机技术的视角提出自己的创业梦想，并分析其中存在技术难题。
7. 介绍一下你对自己所报考研究方向的认识以及期望。

二、英语口语和听力

In information technology, big data is a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications. The challenges include capture, curation, storage, search, sharing, analysis, and visualization. The trend to larger data sets is due to the additional information derivable from analysis of a single large set of related data, as compared to separate smaller sets with the same total amount of data, allowing correlations to be found to "spot business trends, determine quality of research, prevent diseases, link legal citations, combat crime, and determine real-time roadway traffic conditions."

As of 2012, limits on the size of data sets that are feasible to process in a reasonable amount of time were on the order of exabytes of data. Scientists regularly encounter limitations due to large data sets in many areas, including meteorology, genomics, connectomics, complex physics simulations, and biological and environmental research. The limitations also affect Internet search, finance and business informatics. Data sets grow in size in part because they are increasingly being gathered by ubiquitous information-sensing mobile devices, aerial sensory technologies (remote sensing), software logs, cameras, microphones, radio-frequency identification readers, and wireless sensor networks. The world's technological per-capita capacity to store information has roughly doubled every 40 months since the 1980s; as of 2012, every day 2.5 quintillion (2.5×1018) bytes of data were created. The challenge for large enterprises is determining who should own big data initiatives that straddle the entire organization.

计算机学院 2014 年硕士研究生面试试题

姓名：_____ 复试号：_____

一、问答题（至少回答 5 个小题）

1. 介绍一下你在软件或系统开发的经验和体会。
2. 介绍一下你在硬件或嵌入式系统开发的经验和体会。
3. 介绍一下自己的职业规划或人生规划，以及目前已经具备的专业基础。
4. 介绍一下你在计算机专业上的优点和缺点。
5. 介绍一下自己的业余爱好或自己最骄傲的一件事。
6. 结合社会实际需要，利用计算机现有技术，你认为可以有哪些创新和创意。
7. 写一个 C 程序：给 n 个整数，x1,...xn, 找出最小的数。请用二分法递归函数来解决这问题 — 分成两半递归，各解出最小值后再比较。
8. 写一个 C 程序：Given an integer X >=2, print out all the prime factors （质数） of X such that the product of these prime factor = X. 例如，当 X = 24, 输出 2，2，2，3；当 X=220，输出 2， 2，5， 11。输出的顺序可以任意。
9. 请简略解释在 ext2 文件系统，inode 结构里包含了哪些基本信息？
10. 请解释在 Linux，fork（）的功能为何？

重庆大学计算机学院 2016 年硕士研究生面试试题

姓名：[redacted]　　复试编号：[redacted]

一、 简答题（只需任选 5 题作答）

1、 请简述进程与线程的差别，可从调度、地址空间、系统开销等角度进行叙述。

2、 请比较一下 TCP 和 UDP 协议。

3、 请简述数组和链表的区别。

4、 请用任意编程语言写一个程序，该程序实现求两个正整数的最大公约数。输入为正整数 x 和 y，输出为 x 和 y 的最大公约数 m。

5、 f(n)表示 n 条直线最多可以划分的子平面个数，请写出 f(n)的递归表达式（提示：当 n=1 时，平面被分割成 2 个子平面，所以 f(1)=2；当 n=2 时，可以切割成 4 个子平面，所以 f(2)=4，当 n=3 时，最多可以将平面划分成 7 个子平面，所以 f(3)=7）。

6、 请简述快速排序的基本思想，使用如下例子进行说明：输入为 int 型数组 A[6]={1,5,9,3,6,2}，输出为从小到大排序的序列{1,2,3,5,6,9}。

7、 简述 Hadoop 和 spark 平台主要的区别。

8、 请简述数据库事务的原理和作用。

9、 请简述对称密码体制和非对称密码体制。

二、 英译汉

A computer program has beaten a master Go player 3-0 in a best-of-five competition, in what is seen as a landmark moment for artificial intelligence. Google's AlphaGo program was playing against Lee Se-dol in Seoul, in South Korea. Mr. Lee is considered a champion Go player, having won numerous professional tournaments in a long, successful career. Go is a game of two players who take turns putting black or white stones on a 19-by-19 grid. Players win by surrounding their opponent's pieces with their own. In the first game of the series, AlphaGo triumphed by a very narrow margin - Mr. Lee had led for most of the match, but AlphaGo managed to build up a strong lead in its closing stages.After losing the second match to Deep Mind, Lee Se-dol said he was "speechless" adding that the AlphaGo machine played a "nearly perfect game". The two experts who provided commentary for the YouTube stream of the third game said that it had been a complicated match to follow. They said tha Lee Se-dol had brought his "top game" but that AlphaGo had won "in great style". Th AlphaGo system was developed by British computer company DeepMind which was boug by Google in 2014. It has built up its expertise by studying older games and teasing patterns of play. And, according to DeepMind chief executive Demis Hassabis, it has spent a lot of time just playing the game. "It played itself, different versions of itself, mill and millions of times and each time got incrementally slightly better - it learns fro mistakes," he told the BBC before the matches started.

重庆大学计算机学院博士研究生面试题

姓名：

题目和答题纸必须一起交回。

一、问答题：（从中选择 **5** 个题回答）

1. 快速排序（quicksort）和合并排序(merge sort) 两种方法都将输入的待排序序列划分为 2 个子序列，并且递归地对所得的两个子序列分别排序。请阐述快速排序及合并排序两种算法之间的主要区别。
2. 请你用任何语言（例如 C，C++，Python 等）写一个正确的程序完成如下的问题：实现 10 进制向 2 进制转换。输入为一个 10 进制数，输出为该数的 2 进制表示。例如输入为‘9’，输出为‘1001’。
3. 请你用任何语言（例如 C，C++，Python 等）写一个正确的程序完成如下的问题：必须用二分法查找（binary search）解决下面的问题。输入为一个从小到大排好序的整数阵列 A[0,..,N-1]，N 代表 A 阵列的个数, M 是要查找的整数。输出是 k，这个 k 代表 A[k] 是 A 阵列中的最大数其值是<=M。例如 A=【1,3,15,70,108】，则 N=5。若 M=20，则输出 k 是 2.
4. 请解释进程与线程的差别。可从调度，地址空间，系统开销等角度进行叙述。
5. 请简述 TCP/IP 的 IP 的功能？TCP 的作用又是什么
6. 阐述目前的计算机层次化存储体系结构，并说明 Cache 存在的意义。
7. 介绍一下你对大数据及其应用的了解。

二、请翻译英语成为汉语

Computer technology has made incredible progress in the roughly 55 years since the first general-purpose electronic computer was created. Today, less than a thousand US dollars will purchase a personal computer that has more performance, more main memory, and more disk storage than a computer bought in 1980 for $1 million. This rapid rate of improvement has come both from advances in the technology used to build computers and from innovation in computer design.

Although technological improvements have been fairly steady, progress arising from better computer architectures has been much less consistent. During the first 25 years of electronic computers, both forces made a major contribution; but beginning in about 1970, computer designers became largely dependent upon integrated circuit technology. During the 1970s, performance continued to improve at about 25% to 30% per year for the mainframes and minicomputers that dominated the industry.

The late 1970s saw the emergence of the microprocessor. The ability of the microprocessor to ride the improvements in integrated circuit technology more closely than the less integrated mainframes and minicomputers led to a higher rate of improvement—roughly 35% growth per year in performance.

重庆大学计算机学院 2018 年硕士研究生入学复试试题

科目名称：综合面试
总分：100 分
考生姓名：

一、计算机专业综合知识（请从下列各题选择 5 题回答，每题 15 分，共 75 分）

1. RISC 指令系统与 CISC 指令系统的主要区别，并各举一个典型的例子。
2. 阐述单核心 CPU 存在的问题及多核心 CPU 出现的原因。
3. 请简述对称加密与公钥加密的主要区别。
4. 唯密文攻击是密码学中常见一种的对加密信息的攻击，请列举至少 3 种其他类型的攻击。
5. 请简述信道编码和信源编码的区别。
6. 请简述计算机网络中 IP 地址与 MAC 地址。
7. 请简述数据库中索引的作用。
8. 与 Hadoop 相比，Spark 有哪些优势？
9. 什么是软件工程？软件需求分析有哪三种基本原则？
10. 数字图像处理的主要研究内容包含很多方面，请列出并简述其中的 4 种。

二、专业英语翻译（共计 25 分）

Artificial intelligence (AI) is a term that in its broadest sense would indicate the ability machine or artifact to perform the same kind of functions that characterize human thought. The AI has also been applied to computer systems and programs capable of performing tasks complex than straightforward programming, although still far from the realm of actual thou is the part of computer science concerned with the design of intelligent computer syst systems that exhibit the characteristics associated with intelligence in behavior—understanding, language, learning, reasoning, solving problems and so o telligent computing technologies are becoming useful as alternate approaches to c chniques or as components of integrated systems.

一、问答题

请从以下题目中选择6个小题作答，将答案写在答题纸上

1、什么是软件架构？它在软件设计中的地位和作用是什么？

2、进程与线程有什么区别？简要描述一个使用线程的例子。

3、阐述单核心CPU存在的问题及多核心CPU出现的原因。

4、阐述目前的计算机层次化存储体系结构，并说明Cache存在的意义。

5、简述你对图像处理的认识。

6、简述你对模式识别的理解。

7、什么叫图的同构？

8、什么是算法的时间复杂度，什么是空间复杂度？

9、请简述对称加密与非对称加密的主要区别及其优缺点。

10、请列举密码学中两种对加密信息的攻击方法，并简述其攻击过程。

二、专业英语翻译（答案写在答题纸上）

The Internet, as a worldwide communication network, has changed our daily lif
A new paradigm of commerce allows individuals to shop online. The World W
people to share information. The E-mail technology connects people in far-flu
world. This inevitable evolution has also created dependency on the Internet.

The Internet, as an open forum, has created some security problems. Confi
and authentication are needed. People need to be sure that their Internet com
confidential. When they shop online, they need to be sure that the vendors are a
send their transactions request to their banks, they want to be certain that
message is preserved. Network security is a set of protocols that allow u
comfortably without worrying about security attacks.