

分布式算法延伸阅读¹

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¹这是分布式算法课程推荐大家延伸阅读的文献。这个文献列表会在平时不断更新调整，包括增删条目、修改注释、调整文档的目录结构等。这些文献不是一个充分的覆盖，更像是一些经典文献的例举。最新版本请参考“<https://github.com/alg-nju/intro-disalg-course>”。

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第一章 建模和模型

文献 1.1 ([Lamport, 1978]) 消息传递模型的基本概念。

文献 1.2 ([Mattern, 1989]) 逻辑时钟。

文献 1.3 ([Lamport, 1986a, Lamport, 1986b]) 基础建模。
包括 *atomic/regular/safe register* 的概念等。

文献 1.4 ([Misra, 1986]) 硬件访问的公理化建模。

文献 1.5 ([Chandra and Toueg, 1996]) *Failure detector* 的概念。

第二章 Impossibility Results

从道理上讲,“impossibility results”划出了理论的边界,我们才可以进而研究后续的算法设计与分析。这也是为什么impossibility results被放在了具体算法的前面。

但是实际上理论结果的形成,包括大家学习分布式算法的过程,却往往不是这样的。所以大家可以尽管跳过这一章,先了解后面的内容。待对分布式算法有了基本的认识之后,再回来深入研究经典的impossibility results。

文献 2.1 ([Attiya and Ellen, 2014]) 不可能性结果的系统讲解书籍。

文献 2.2 ([Fischer et al., 1985]) *FLP*结果。

第三章 MSG算法

文献 3.1 ([Lamport, 2001]) *Paxos*算法。

文献 3.2 ([Ongaro and Ousterhout, 2014]) *Raft*算法。

第四章 SHM算法

文献 4.1 ([Attiya et al., 1995]) 定义 *distributed atomic register*。

文献 4.2 ([Herlihy and Wing, 1990]) 定义 *linearizability*。

文献 4.3 ([Shao et al., 2011]) 多写 *register* 的 *regularity* 的定义。

文献 4.4 ([Herlihy, 1991]) *Consensus number* 的概念。

文献 4.5 ([Herlihy and Shavit, 2011]) *Progress condition* 概念的系统阐述。

文献 4.6 ([Lamport, 1974]) *Bakery* 算法。

第五章 经典系统

文献 5.1 ([Gilbert and Lynch, 2012, Brewer, 2012]) *CAP* 定理。

*Eric Brewer*在2000年提出。

[Gilbert and Lynch, 2012]是12年后 *Gilbert*和 *Lynch*对 *CAP*定理所作的阐释。

[Brewer, 2012]是作者自己在12年后的思考。

文献 5.2 ([Abadi, 2012]) *PACELC*权衡，可以看做是 *CAP*定理的拓展。

文献 5.3 ([Li and Hudak, 1989]) 分布共享内存系统。

文献 5.4 ([Charron-Bost et al., 2010]) 涉及复制技术的经典理论、系统的系统阐述。

文献 5.5 ([Chandra et al., 2007]) *Google*的 *Paxos*实现。

文献 5.6 ([Chang et al., 2008]) *Google*的 *BigTable*。

文献 5.7 ([Baker et al., 2011]) *Google*的 *Megastore*。

文献 5.8 ([Corbett et al., 2012]) *Google*的 *Spanner*。

文献 5.9 ([DeCandia et al., 2007]) *Amazon*的 *Dynamo*。

文献 5.10 ([Lakshman and Malik, 2010]) *Facebook*的 *Cassandra*。

文献 5.11 ([Hunt et al., 2010]) *Yahoo*的 *Zookeeper*。

文献 5.12 ([Burrows, 2006]) *Google*的 *chubby*。

文献 5.13 ([Gelernter, 1985]) 基于 *tupple space*的协同。

第六章 形式化规约与验证

文献 6.1 ([Burckhardt, 2014]) *vis-ar* 框架。

Replicated Data Type 的 *declarative* 的规约框架。

文献 6.2 ([Cerone and Gotsman, 2018]) *vis-ar* 框架向分布事务 *isolation level* 的拓展。

文献 6.3 ([Marić et al., 2017]) 共识算法的共性提炼与验证。

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