

Computer Ethics: A Case Study of Plagiarism in Higher Education

Irwin King

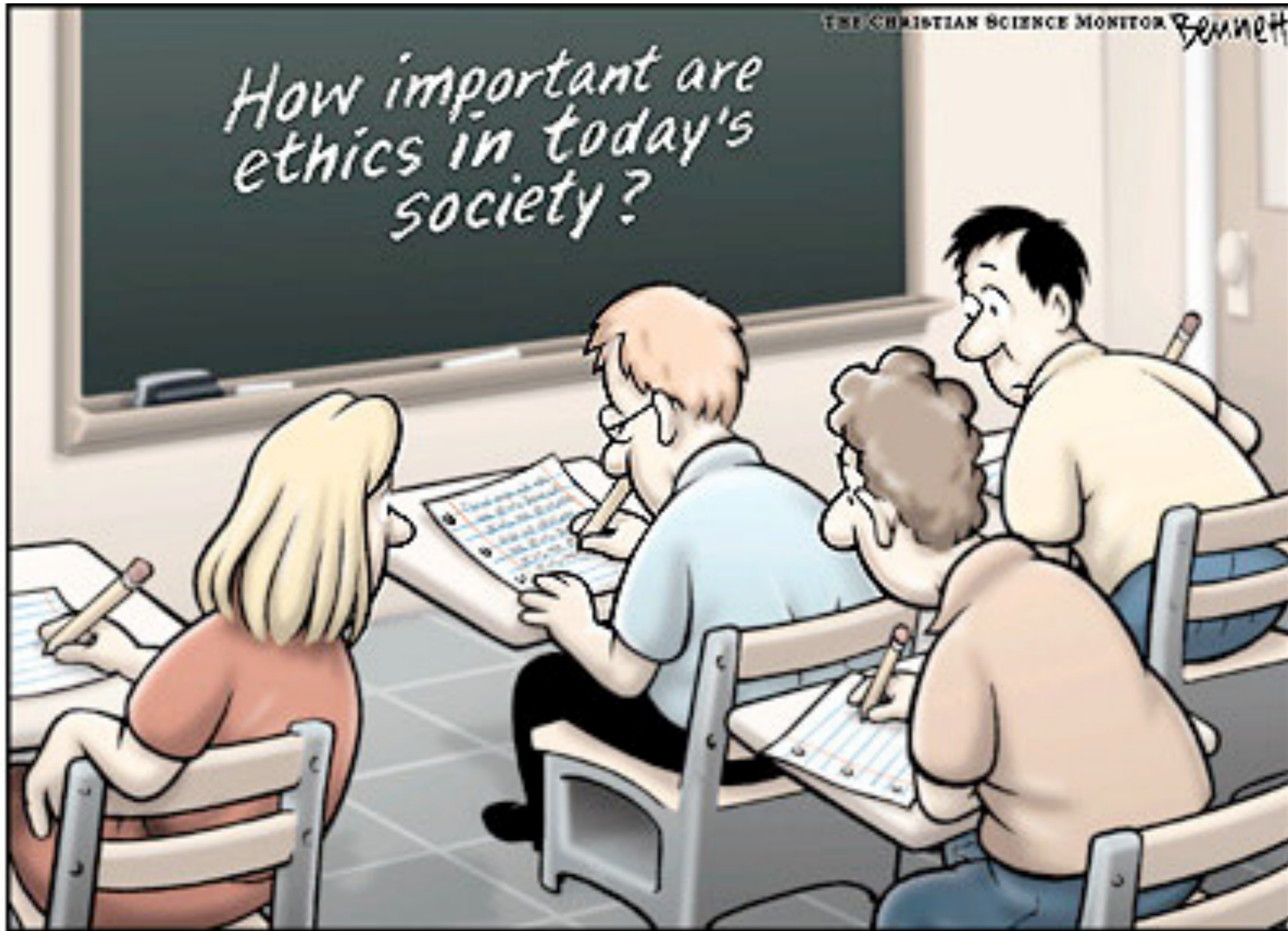
Department of Computer Science and Engineering
The Chinese University of Hong Kong

king@cse.cuhk.edu.hk

<http://www.cse.cuhk.edu.hk/~king>

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Computer Ethics: A Case Study of Plagiarism in Higher Education, Irwin King
The 2nd International Workshop on Education Technology and Computer Science (ETCS2010), March 6-7, 2010, Wuhan, China



道 德

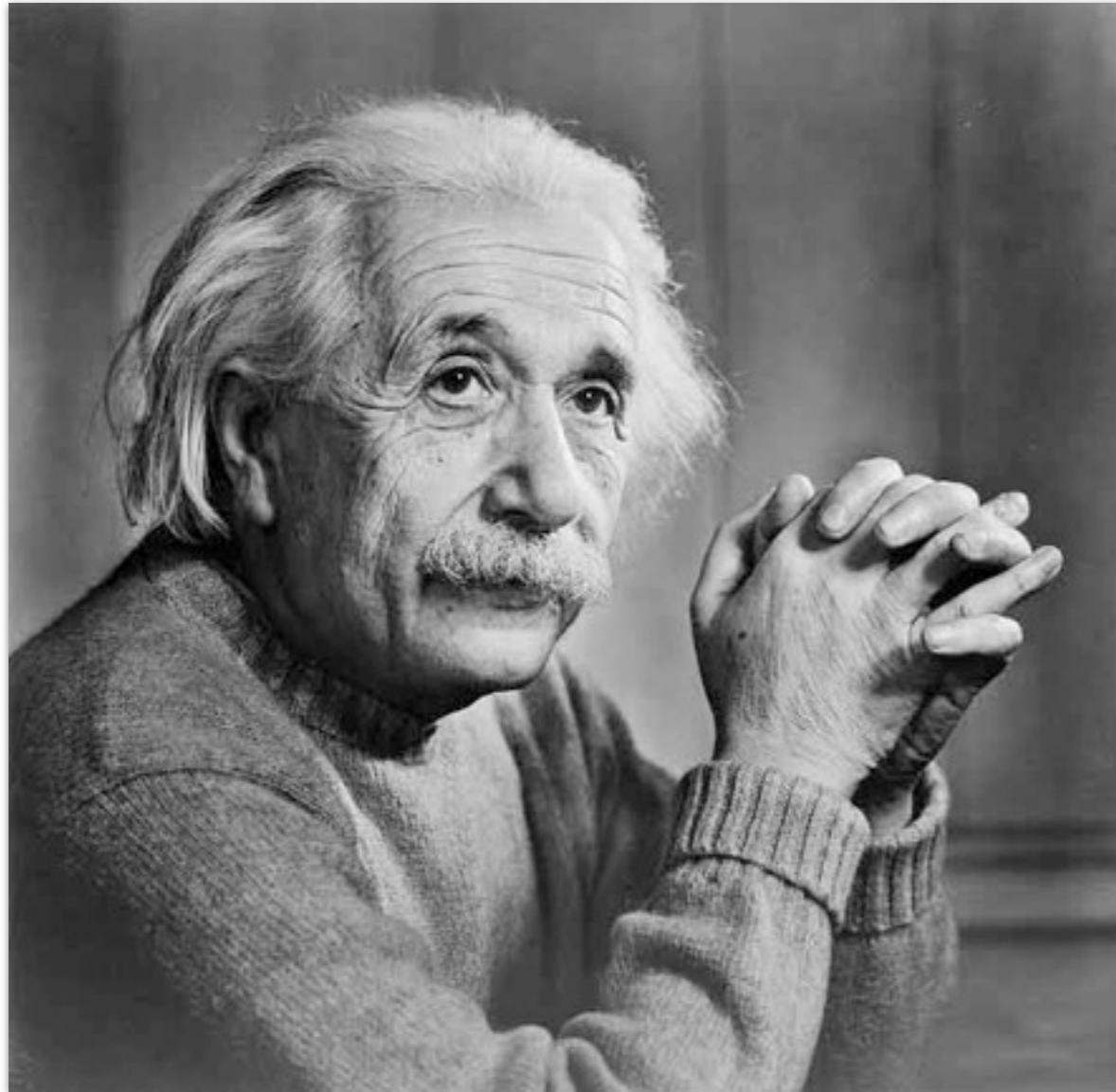
「道」指自然運行與人世共通的真理；而「德」是指人世的德性、品行、王道(= 儒家認為作為君主應該推行的統治方法)。



RYGHTTE

VBRACIG





*“Relativity applies to
physics,”*

Albert Einstein



Outline

- Ethics/Technology Ethics/Computer Ethics
- Academic Plagiarism
- VeriGuide System



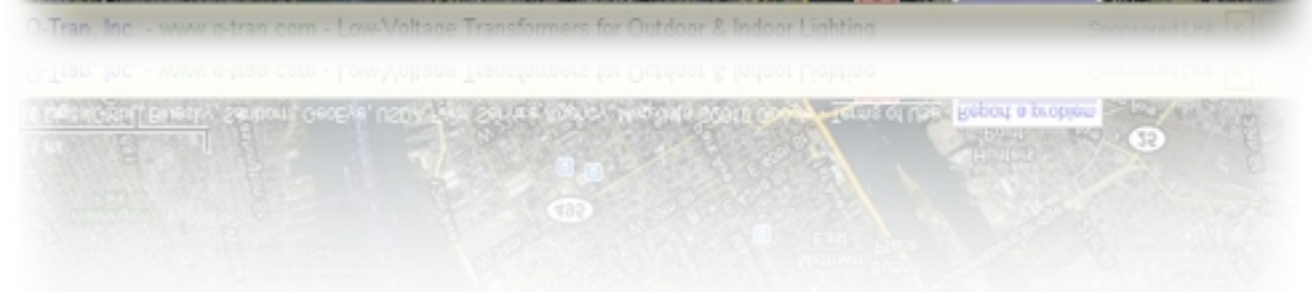
Timeline of Computer Ethics

“The Human Use of Human Beings” by Norbert Wiener	Fair Credit Reporting Act	Right to Federal Privacy Act	Electronic Communications Privacy Act	First ETHICOMP conference	Uniform Computer Information Transactions Act
1950	1970	1978	1986	1995	2004
1966	1973	1984	1992	1998	2009
First computer crime	ACM Code of Ethics	Small Business Computer Security and Education Act	ACM Code of Ethics and Professional Conduct	Digital Millennium Copyright Act	Principles of the Law of Software Contracts
Freedom of Information Act					



Street View on Google Maps

- Put 3D images of streets on the Internet
- Useful for house hunting, planning holidays, ...etc
- Invasion of privacy?
- Help robbers to find their targets?



Social Networking Sites



Make new friends and keep in touch with old friends

- Illicit use of social networking sites?
- Distract students and affect their academic performance?



Chat Rooms

- Interact with friends regardless of geographic distance
- Provide a medium for criminals to communicate?
- Allow pedophile to find victims?
- Allow users to use fake identities
- Help criminals to hide their identities?
- Protect privacy vs. Protect vulnerable users



Online-Gambling

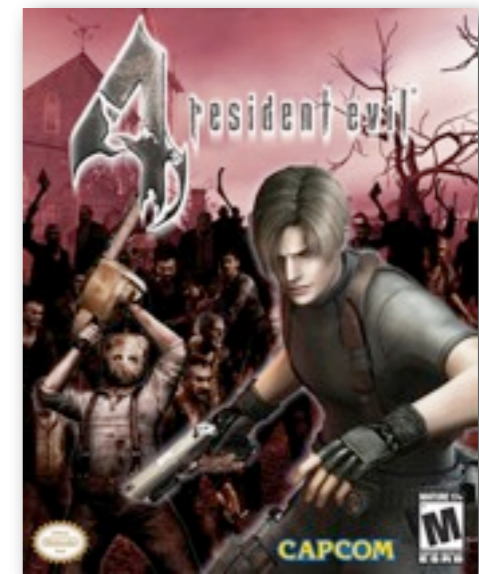


- Enjoyable game experience
- Risk of gambling addiction?

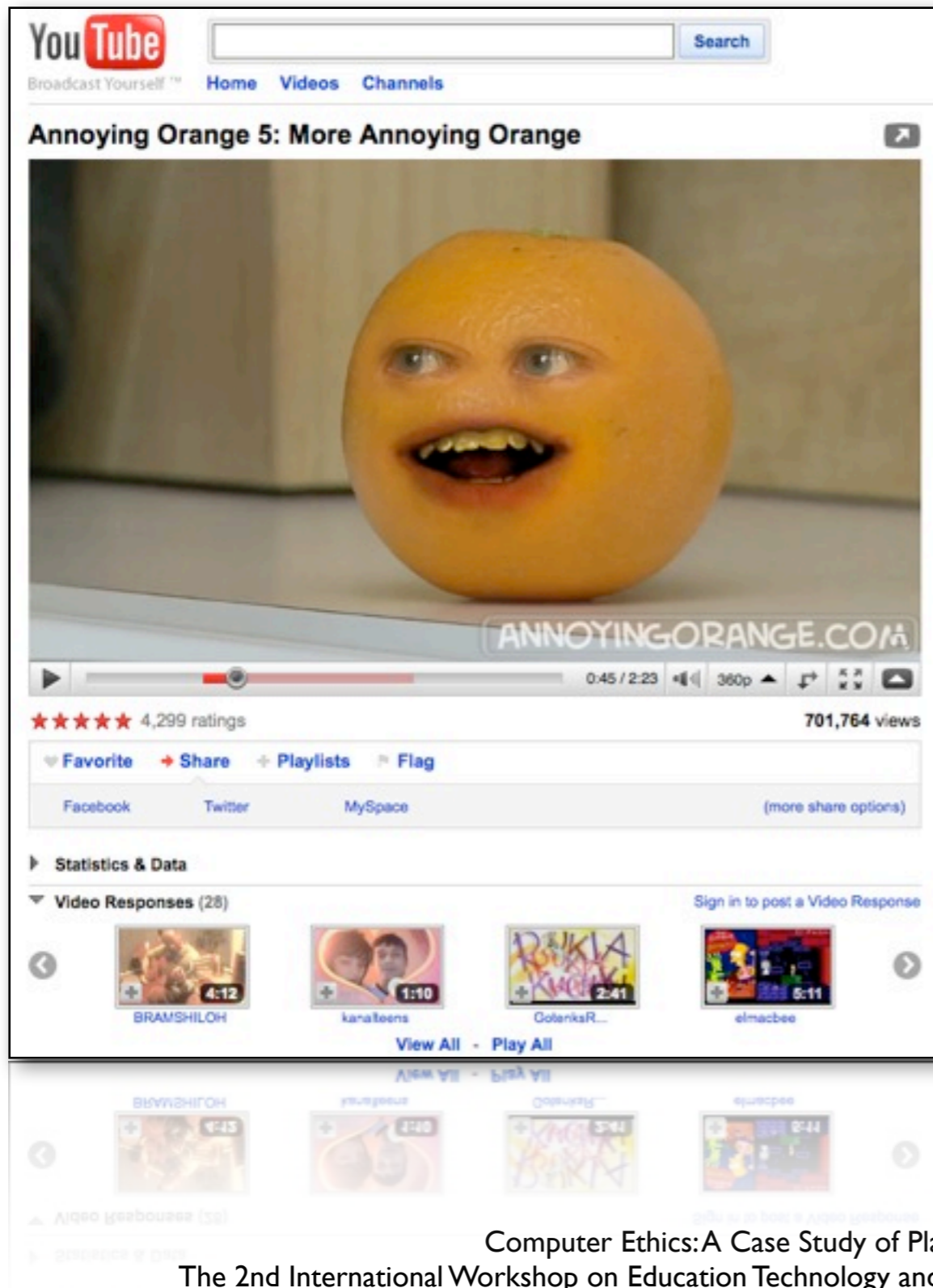


Violent Computer Games

- Enjoyable game experience
- **Too violent?**
- Freedom of choice vs. Protection from harm



YouTube Video Extraction Software



- Youtube protects copyright by restricting the download of video
- However, there exist some programs that can extract video from youtube
- Do these programs infringe copyright?
- Do the videos invade personal privacy?



Fake Wikipedia Entries

Wednesday, December 14, 2005 04:37:24 AM

WIKI

More Fake Wikipedia Entries Found

This week a bogus entry in Wikipedia, the online encyclopedia in which users submit material, was revealed when a Tennessee newspaper publisher was falsely linked to the Kennedy assassination. A further search of the Wiki service has found other erroneous entries, such as the following:

George Walker Bush: The 43rd president of the United States of America.

Upon being elected Bush immediately set to work on ridding the nation of the partisan politics that had plagued America under his predecessor.

Bush is respected by members of both parties for his intellect and his willingness to listen to opinions contrary to his own.

Once a successful businessman, Bush turned his focus to international politics in an effort to make the world a safer place. His motto being: The world's only superpower should only use its military might as a last resort.

A compassionate conservative and a uniter, Bush first won the presidency fairly and squarely in 2000 against the challenger of the time, Al Gore, of [the Democratic Party](#).



Sharing of Copyrighted Materials

- Three types
 - Peer-to-peer networks
 - File sharing servers
(users upload copyrighted materials to the servers)
 - Servers with copyrighted materials
(server owners provide copyrighted materials)



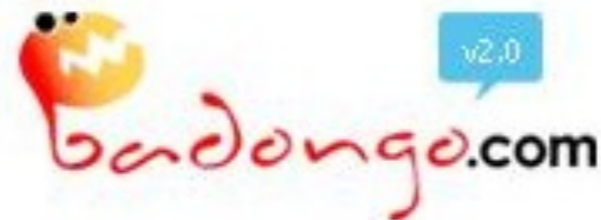
Peer-to-Peer Networks



File Sharing Servers



youSendIt



youSendIt



Servers with Copyrighted Materials



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Cyber Crimes

- Spam
- Fraud, Internet scams
- Obscene or offensive content
- Drug trafficking
- Hacking
- Cyberterrorism



Cyber Warfare

- Cyber WWII?
- Battlefield
- Tactics
- Reported threats
- Electrical power grid
- Cyber counterintelligence



Plagiarized Website Design



[Advanced Search](#)
[Language Tools](#)

Magnitude 8.8 earthquake in Chile - [Help and learn more](#)

[Advertising Programs](#) - [Business Solutions](#) - [About Google](#) - [Go to Google Hong Kong](#)

©2010 - [Privacy](#)

VS

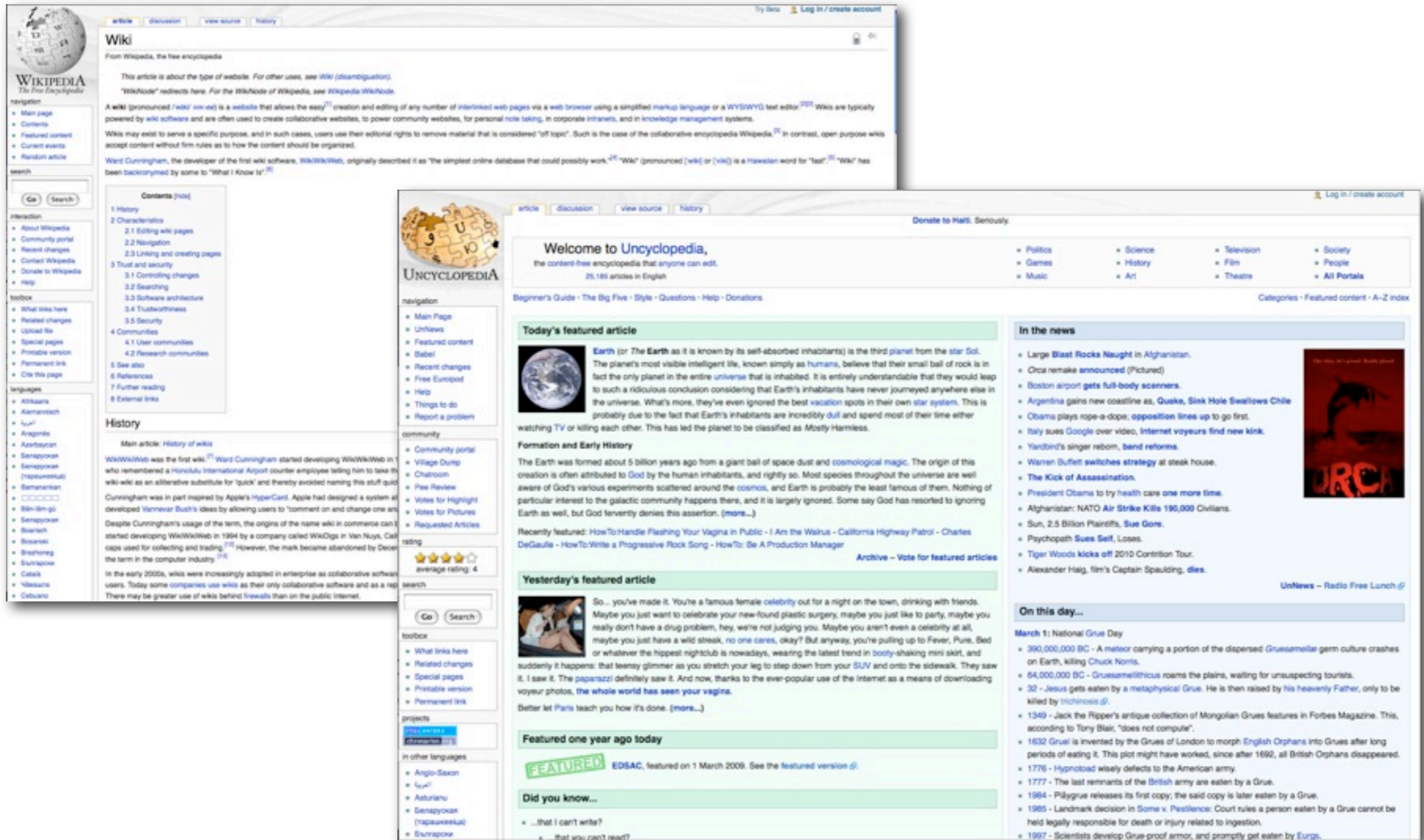


双搜 / 三搜 对比搜索 搜索一下就知道
集成三大搜索引擎, 步入搜索新概念

无敌三脚猫网址导航 免费领取话费, 最高赠送100分钟



Plagiarized Website Design



Plagiarism

- Merriam-Webster's online dictionary defines "plagiarize" as

the process of **stealing** and passing off the ideas or words of another as one's own, and using them **without crediting** the source



Plagiarism

- Plagiarism can appear in many forms, such as
 - Text
 - Images, photos, art work, etc.
 - Music, composition, sound, etc.
 - Video, animations, movies, etc.
 - Designs, concepts, etc.
 - Programming codes



Plagiarism in Academic Writing

- In United States, a survey by Rutgers University indicates that
 - In 2000, **10%** of students surveyed plagiarized from the Internet
 - In 2003, **38%** of students surveyed plagiarized from the Internet
- In 2008, the student newspaper Varsity reported that **49%** of Cambridge students have committed some form of plagiaristic act



Plagiarism Statistics

Survey shows plagiarism is up

By Adam Beam

Published: Wednesday, September 17, 2003

Updated: Sunday, September 6, 2009



A survey conducted by a Rutgers University professor found that 38 percent of college students have participated in the cut-and-paste style of online plagiarism during the past year.

Rutgers University Management professor Don McCabe organized the survey, which encompassed 18,000 college students, 2,600 faculty and 650 teaching assistants on 23 campuses. McCabe would not say what campuses were used in the survey.

The survey defines cut-and-paste Internet plagiarism as paraphrasing or copying a few sentences of material from the Internet without citing the source.

Stealing from Internet sources seems to be on the rise among college students. Three years ago, the same survey found that only 10 percent of students surveyed used plagiarized material from the Internet. This year's study found that almost half the students surveyed said they did not consider Internet plagiarism as cheating.

"My purpose in doing this is to convince schools that this is an issue they need to address," McCabe said.

McCabe said a majority of the students filled out the survey online, but some smaller schools did use a written version. Some schools offered incentives for students to fill out the survey, such as autographed footballs from players and coaches at their school or coupons for fast food restaurants. McCabe said these schools got a response rate as high as 40 percent or 45 percent. Even though students filled out the survey anonymously, McCabe said he thinks the survey is still understating the problem.

But while the rise of the Internet has made it easier for students to cheat, it has also made it easier for professors to catch them. Web sites like Turnitin.com offer professors a huge database to check students' papers against for stolen phrases. McCabe's survey found that 20 percent of faculty members surveyed use software to hunt for possibly offenders.



Consequences of Plagiarism

- Student
 - **Deteriorate** the learning attitudes
 - **Unfair** learning environment and scoring
 - **Less incentive** to acquire knowledge seriously
 - The vicious circle continues as more and more students participate in plagiarism in order to secure a high score



Consequences of Plagiarism

- Teacher
 - Need to **spend vast amounts of time** and effort to identify and verify plagiarism, or think of ways to prohibit plagiarism
 - The problem worsens when the class size is large and non-trivial means are used by students to hinder the detection process
 - As a result, **teaching quality** is likely being **sacrificed**



Consequences of Plagiarism

- Institution
 - The **reputation** of the institution may be **tarnished** due to unfair scoring, unmotivated students, and deteriorated teaching quality
 - Fail to produce well-trained graduates and **unable to achieve significant signification academic goals**



Consequences of Plagiarism

- Society
 - Every modern society invests on education and expects measurable benefits in terms of **creativity, originality, productivity, and high moral standards**
 - **Plagiarism diminishes** these benefits



Cost of Plagiarism

Times Business Reporter Accused of Plagiarism Is Said to Resign

By THE NEW YORK TIMES
Published: February 16, 2010

A New York Times reporter accused of plagiarizing portions of several articles resigned from the newspaper on Tuesday, according to two people briefed on the matter.

The reporter, Zachery Kouwe, who had already been suspended, met late Tuesday afternoon with representatives of The Times, [The New York Times Company](#) and the Newspaper Guild of New York. The participants were to discuss possible disciplinary action, including dismissal, but instead Mr. Kouwe resigned.

Participants were told that the meeting had to remain confidential, but the events were described by the two people who spoke on condition of anonymity.

Last Friday, the managing editor of The Wall Street Journal, [Robert Thomson](#), sent a letter to editors of The Times saying that portions of an article written on Feb. 5 by Mr. Kouwe were identical or nearly identical to a Journal article published online hours before Mr. Kouwe's. The Times editors investigated and found other examples.

SIGN IN TO RECOMMEND

 TWITTER

 SIGN IN TO E-MAIL

 PRINT

 REPRINTS

 SHARE

CYRUS
JULY 9



VeriGuide(維誠)

- **Similarity text** detection system
- Developed at **CUHK** in 2005
- Promote and uphold academic **honesty, integrity, and quality**
- Support **English, Traditional and Simplified Chinese**
- Handle **.doc, .txt, .pdf, .html,** etc. file formats
- Generate detailed **originality report** including **readability**



VeriGuide

- Introduction
 - Provide an effective plagiarism detection in both **Chinese and English**
 - Check over **the Internet** and within **the submission batch**
 - Provide **assignment management service** to teachers
- Student-oriented version
 - Upgraded to improve the **user-friendliness** and **performance**
 - Integration of **assignments collection** and **plagiarism detection**
 - **Minimal** teachers' involvement

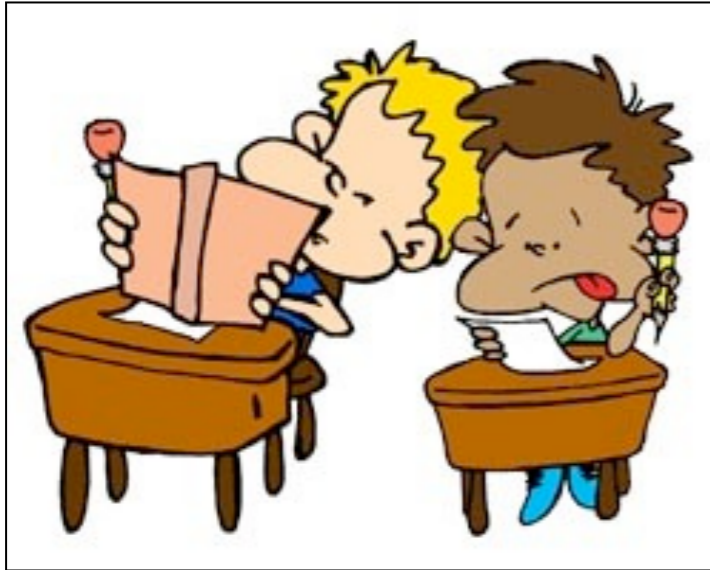


Main Benefits

- Uphold **academic honesty**
- Promote **fair learning environment** among students
- Reduce teachers' **workloads** in detecting plagiarism
- Archive **homework database** for institutions
- Assess **students' performance** over time
- Provide **Quality Assurance (QA)** reports



Plagiarism Channels



Classmates



Contracts



Past assignments



References or books



Internet



Student-Oriented Version

- Main features and enhancements
 - Retrieve course registration information **automatically** from Registration Unit
 - **One-stop assignment collection** for students
 - **Automatic plagiarism detection** after deadline
 - **Simplified** interface and operation
 - **Enriched report** with more information
 - Readability score

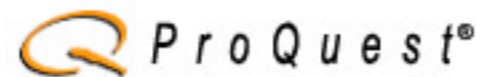


Matching Scope

- Within the **assignment submission**
- With course **assignment databases**
(Past student submissions)
- With teachers' provided **references**
- **Internet resources**
- Digital library / **publisher** databases



Our Digital Library / Publisher Partners (more forthcoming)



Compatibilities

- Document and language compatibility
 - Check essay-typed document
 - Support **Traditional** Chinese, **Simplified** Chinese and English
- Format compatibility
 - **Microsoft Word** 97-2008 (.doc)
 - **Microsoft PowerPoint** 97-2008 (.ppt)
 - **Microsoft Excel** 97-2008 (.xls)
 - **OpenOffice**
 - Adobe **Acrobat** (.pdf)
 - **HTML** (.html) web document
 - Plain **Text** (.txt)
 - **Zip** archive (.zip)



Originality Report

- **Leniency control**, keyword and URL preferences
- Detailed document **statistics**
 - **Paragraph-based readability** analysis
- Amount of **suspected plagiarism** for each document
- **Side-by-side** and highlighted comparison between the documents and the plagiarized sources



Demonstration

Home

VeriGuide

What is New?

The Chinese University Plagiarism IDentification Engine (CUPIDE) is now renamed as VeriGuide, the URL for submitting assignment is now:
<http://www.cuhk.edu.hk/veriguide>.

In the new system, you can:

- Upload a ZIP file if your assignment contains multiple documents.
- Select the different term when you submit your assignment.
- Specify a teacher responsible for your assignment.

Please feel free to contact us with your feedback.

CWEM Login

Enter your CWEM computing ID and password to log in to VeriGuide.

Computing ID:

Password:

[What is CWEM Computing ID?](#)
If you cannot login, please try to login [MyCUHK](#) to test your account first.



Leniency Control

Document in the submission: 1st_Book_Report_F.3.doc	Detailed matching with threshold 80% Sentence length threshold: 3	Suspected plagiarized source: Harry_Potter_and_the_Deathly_Hallows.htm From : Within submission
Proportion: 12/67 17.9%	Clear highlight	Proportion: 13/555 2.34%

to Harry in his magazine, The Quibbler. Fearing of his daughter's safety, he secretly told the Ministry about the presence of the trio in his house, but the trio successfully escaped.

With the knowledge of the presence of the Elder Wand, Harry was convinced that Voldemort was searching for the Elder Wand. As he accidentally spoke of the word "Voldemort", the trio was captured by the Snatchers and was imprisoned at the Malfoys' Manor along with Luna, Dean, Ollivander the wand maker and Griphook the goblin. As she found the Sword of Gryffindor in the trio's possession, Bellatrix Lestrange was afraid that the trio broke into her bank vault so she tortured Hermione for answer. Dobby the house elf later apparates into the manor and rescued Luna, Dean and Ollivander, making Peter Pettigrew come to investigate the noise. **He strangled Harry but the scene reminded him that he owed a life debt to Harry and it caused Pettigrew to choke himself with his own hands in retribution.** Harry and Ron ran upstairs and rescued Hermione. Ron disarmed Bellatrix and Harry took Draco Malfoy's wand. Dobby reappeared and rescued the rest of them to the cottage of Bill and Fleur but as they escape, Bellatrix threw a knife at Dobby and killed him. At the cottage, Ollivander confirmed the existence of the elder wand and he told the trio that the wand's allegiance would transfer to another person if he defeats or disarms the previous owner. Then, as Harry thought over what had happened in the manor, he remembered Bellatrix's behavior and was convinced that there's another Horcrux in her bank vault. Therefore they broke into Bellatrix's vault with the aid of Griphook, in exchange of the Sword of Gryffindor as it was actually goblin made. They retrieved the Hufflepuff's Cup Horcrux. At the meanwhile, Voldemort stole the Elder Wand from Dumbledore's tomb as he believed that the wand was the only wand that is powerful enough to let him kill Harry. **Voldemort then unintentionally revealed the existence of a Horcrux in Hogwarts.**

The trio then traveled to Hogwarts. They warned the staffs of the coming invasion of Voldemort. Harry also learnt that Ravenclaw's Diadem was a Horcrux, while Hermione cleverly used the fang of Nagini left in the Chamber of Secrets to destroy the Cup Horcrux. Harry then recalled seeing the diadem in the Room of Requirements and the trio went there. Malfoy, Crabbe and Goyle attacked them there while Crabbe mishandled the Fiendfyre spell and killed himself along with destroying the diadem. Harry took another small look into Voldemort's mind, leading the trio going to the Shrieking Shack. Inside, they witness the killing of Snape by Nagini as Voldemort believed that Snape defeated Dumbledore. As Snape was dying, he gave Harry his memory and that showed his loyalty to Dumbledore due to his love to Lily Potter, Harry's mom. The memory also showed that it was Snape who sent the doe Patronus in the forest and it also revealed that Harry was a Horcrux. Resigned to death, Harry went to Voldemort's camp. **He found the resurrection stone along the way and he summoned his parents', Sirius' and Lupin's soul which comforted him and provided a safe passage.** When Harry arrived, he let Voldemort use the killing curse on him. Harry didn't know if he's alive or not. Dumbledore appeared and told him that the Horcrux part in Harry had been destroyed and Harry would live on as Voldemort used Harry's blood to create his new body, which made Harry undefeatable. Harry then resurrected, but he acted still dead. Voldemort made Hagrid taking Harry's body to the School Hall. Neville Longbottom defied Voldemort, he took the Sword of Gryffindor out of the Sorting Hat and used it to kill Nagini. As Neville killed Nagini, Harry challenges Voldemort as he knew he was the rightful owner of the Elder Wand as when Draco Malfoy disarmed Dumbledore in the Astronomy Tower, he unknowingly became the master of the wand but later Harry took Malfoy's wand so Harry became the wand's true master. **Harry took the Elder Wand and cast the Disarming spell at Voldemort while Voldemort returned with the killing curse.** As the Elder Wand was the most powerful wand, it backfired Voldemort's killing curse and Voldemort dies. After the fight, Harry went to the Headmaster's office and spoke to Dumbledore's portrait about him keeping the Invisibility Cloak and would return the Elder Wand to Dumbledore's tomb as if he would remain undefeated when he dies, the power of the wand will be extinguished. The Dumbledore in the portrait approved. **Just before returning the wand, Harry used it to repair his own wand.**

After the whole adventure, there's the epilogue in the book. It is about what's going on nineteen years later. Harry and Ginny, Ron's sister got married and had two boys and a girl. **Ron and Hermione also got married and had two children.** The families met in the train station when their children were to go to Hogwarts by train. Harry's son, Albus Snape Potter was worried that he would be distributed to the Slytherin House for the name of "Snape", Harry comforted him by telling him that the Sorting Hat takes the person's choice into account also. The story ended with the words "The scar had not pained Harry for nineteen years. All was well."

when pressed about Luna's absence, Lovegood admits that Death Eaters abducted her in retaliation for supporting Harry in his paper, The Quibbler. Fearing for Luna's safety, he has alerted the Ministry that the trio are there, but they escape. Harry is convinced Voldemort is seeking the Elder Wand. When he inadvertently speaks Voldemort's name, they are immediately captured by Snatchers and imprisoned at Malfoy Manor, along with Luna, Dean, Ollivander and Griphook. Finding Gryffindor's sword among the trio's possessions, Bellatrix Lestrange worries they have broken into her Gringotts vault, and tortures Hermione for answers. Dobby apparates into the cellar and rescues Luna, Dean, and Ollivander, prompting Peter Pettigrew to investigate the noise. **He throttles Harry, but reminded that he owes a life debt,[HP3] Pettigrew loosens his grip, causing his own silver hand to choke him to death in retribution.** Harry and Ron rush upstairs to rescue Hermione. Ron disarms Bellatrix and Harry takes Draco's wand. Dobby reappears, and they disappear to Bill and Fleur Weasley's cottage. As they escape, Bellatrix throws a knife that kills Dobby. At the cottage, Ollivander confirms the Elder Wand's existence and says that a wand can transfer its allegiance if the previous owner is defeated or disarmed. Bellatrix's behaviour convinces the trio that another Horcrux is hidden in the Lestrange vault. Aided by Griphook, they infiltrate Gringotts Bank and retrieve Hufflepuff's Cup Horcrux. Meanwhile, Voldemort opens Dumbledore's tomb and steals the Elder Wand. Dumbledore captured it after defeating the dark wizard Grindelwald in a duel. Voldemort believes it is the only wand powerful enough to defeat Harry. **Voldemort also realises that his Horcruxes are being destroyed; his mind link with Harry unintentionally reveals that another Horcrux is hidden in Hogwarts.** The Battle of Hogwarts The trio travel to Hogsmeade, where Aberforth Dumbledore smuggles them into Hogwarts. Harry alerts the staff to Voldemort's impending invasion, while Hogwarts allies arrive. Harry learns that Ravenclaw's Diadem is a Horcrux, while Hermione destroys the Cup Horcrux with a basilisk fang retrieved from the Chamber of Secrets. [HP2] Harry recalls seeing the diadem in the Room of Requirement. [HP6] The trio are attacked there by Malfoy, Crabbe, and Goyle. Crabbe mishandles the powerful Fiendfyre spell, killing himself and destroying the diadem, although the others escape. Harry glimpses Voldemort's mind again, leading the trio to the Shrieking Shack. Inside, they witness Voldemort kill Snape with Nagini, believing it will make him the Elder Wand's master. As Snape dies, he gives Harry memories that prove his loyalty to Dumbledore, motivated by his lifelong love for Harry's mother Lily. After being cursed by Gaunt's Ring Horcrux, a doomed Dumbledore ordered Snape to kill him, if necessary, at a strategic time. It was Snape who sent the doe Patronus in the Forest of Dean. The memories also reveal that Harry himself is a Horcrux. Resigned to death, Harry approaches Voldemort's camp in the Forbidden Forest. **Along the way, he finds the Resurrection Stone inside the Snitch and summons the spirits of his parents, Sirius Black and the recently killed Remus Lupin, who comfort him and provide safe passage.** Voldemort then strikes him with Avada Kedavra. Awakening in an ethereal place, Harry is uncertain whether he is alive or dead. Dumbledore appears and explains that Voldemort's Horcrux within Harry has been destroyed. He says that just as Voldemort cannot die while his soul fragments remain, Harry is also protected from death because his blood was used in Voldemort's resurrection. Harry revives, but feigns death. Voldemort has Hagrid carry Harry's body to Hogwarts as a trophy. When Neville Longbottom defies Voldemort, the Sorting Hat is placed aflame on his head; pulling it off, he withdraws Gryffindor's sword from it and beheads Nagini, destroying the final Horcrux. As the fighting resumes, many magical folk join the battle against the Death Eaters. Knowing that he is the Elder Wand's true master, Harry challenges Voldemort. When Draco Malfoy disarmed Dumbledore on the Astronomy Tower,[HP6] he unknowingly became the Elder Wand's master; Harry gained its allegiance when he captured Draco's own wand. **Voldemort casts a Killing Curse as Harry conjures a Disarming Spell, but the Elder Wand backfires Voldemort's curse, killing him.** Among the battle's casualties are Fred Weasley, Remus Lupin, Nymphadora Tonks, Colin Creevey and Bellatrix Lestrange. Harry tells Dumbledore's portrait he is keeping the Invisibility Cloak, but the Resurrection Stone will remain lost in the forest, while the Elder Wand is to be returned to Dumbledore's tomb, where its power will be extinguished if Harry dies undefeated. Dumbledore approves. **Before returning the Elder Wand, Harry uses it to repair his own wand.** Epilogue Nineteen years later, Harry and Ginny Weasley are married and have three children: James, Albus Severus, and Lily. **Ron and Hermione are also married and have two children, Rose and Hugo.** The families meet at King's Cross station, where a nervous Albus is departing for his first year at Hogwarts. Harry's nineteen-year-old godson, Teddy Lupin, is found kissing Victoire Weasley (Bill and Fleur's daughter) in a train compartment. Teddy is apparently very close to the Potters, with Harry remarking, "He already comes round for dinner about four times a week." Harry spots Draco Malfoy and his unnamed wife with their son, Scorpius; Malfoy



Leniency Control

Document in the submission:
1st_Book_Report_F.3.doc

Detailed matching with threshold 70%
Sentence length threshold: 3

Suspected plagiarized source:
Harry_Potter_and_the_Deathly_Hallows.htm
From : Within submission

Proportion:
22/67 32.8%

Clear highlight

Proportion:
23/555 4.14%

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Summary

- Increased usage at CUHK
- Improvement in reduced plagiarism
- Accountable to government and stake holders
- Being used for
 - Graduate School
 - Competitions
 - Grant proposals
 - Conferences



Conclusion

- **Computer ethics** is of paramount importance!
- **Academic plagiarism** is a serious problem!
- VeriGuide helps to uphold **academic quality** by promoting **honesty** and **integrity** in a fair environment

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 - Mr. Patrick Lau
- Staff:
 - Mr. Chi Hong Cheong
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Irwin King (金國慶), [WISC Lab](#)

Associate Professor, B.Sc. ([Caltech](#)), M.Sc., Ph.D. ([USC](#))
[SMIEEE \(CIS\)](#), [MACM](#), [MINNS \(BoG\)](#), [APNNA \(VP\)](#), [IrwinKing.com](#)

"...the truth shall set you free.", Caltech's Motto

[Department of Computer Science and Engineering](#)
[The Chinese University of Hong Kong](#), Shatin, NT, Hong Kong
Phone: +(852) 2609 8398; **Fax:** +(852) 2603 5024
Email: king [at] cse [dot] cuhk [dot] edu [dot] hk

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- Associate Editor of IEEE Computational Intelligence Magazine ([IEEE CIM](#))
- Board Member, Board of Governors, International Neural Network Society ([INNS](#))
- Vice-President and Board Member, Asia Pacific Neural Network Assembly ([APNNA](#))

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- Member of [RGC Engineering Panel](#), The Hong Kong SAR Government
- Principal Investigator, Chief Technologist, and Co-Founder, The [VeriGuide](#) Project, CUHK
- **General Chair**, The Fourth ACM International Conference on Web Search and Data Mining ([WSDM2011](#)), February 2011, Hong Kong
- **Program Co-Chair**, [IEEE WIC/ACM International Conference](#), August 31-September 3, 2010, Toronto, Canada
- **Plenary**, The 5th Conference on Intelligent Systems and Knowledge Engineering ([ISKE2010](#)), Hangzhou, China, November 15-16, 2010.
- **Tutorial Speaker**, Introduction to Social Recommendation, World Wide Web Conference ([WWW2010](#)), April 26-30, 2010, Raleigh, NC, USA
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Computer Ethics: A Case Study of Plagiarism in Higher Education, Irwin King
The 2nd International Workshop on Education Technology and Computer Science (ETCS2010), March 6-7, 2010, Wuhan, China



《易經》

天行健，君子以自強不息；
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