**PEAP 4 6-Week Online – Annotated Bibliography**

Note for students: Throughout the reading process, please use this document to keep a record of the sources you have read and to take notes. Your tutor should regularly ask to see this document to monitor your progress.

|  |  |  |
| --- | --- | --- |
| **Date read** | **Source Information**  (e.g. reference list entry with link to source) | **Notes** [write in your own words. Do not copy and paste from the original source] Include key points from the source (e.g. methodology, findings, recommendations, etc) as well as your own clearly labelled critical comments. |
| 26 July 2024 | https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1776700&dswid=-6460 | Can artificial intelligence replace humans in programming?  Research on ChatGPT programming capabilities – ChatGPT could solve general programming problems.  Chatgpt often encounters some performance problems when processing complex code logic, including an increase in time complexity.  Participants: Ekedahl, HampusHelander, Vilma**Supervisors:** Punnekkat, Sasikumar, Professor **My comments:**  This suggests that it is possible for chatGPT to help programmer to tagle some programming issues such as genarating a simple code fragment. |
| 11 Aug 2024 | https://www.sciencedirect.com/science/article/abs/pii/S0167642324000340 | “Will I be replaced?” Assessing ChatGPT's effect on software development and programmer perceptions of AI tools My comments:  ChatGPT 3.5 is more effective in solving easy and medium coding problems but less reliable for harder problems. Further, ChatGPT 3.5 is somewhat more effective at coding problems with higher popularity scores.  Artificial intelligence tools such as ChatGPT 3.5 can help programmers become more productive by creating better-performing, shorter, and more readable code. |
| 12 Aug 2024 | https://trepo.tuni.fi/bitstream/handle/10024/156661/LeThiMinhThuy.pdf?sequence=2 | UTILIZING AI TOOLS IN LEARNING INTRODUCTORY PROGRAMMING:  My comments:  No statistically significant difference in performance between students who utilized ChatGPT and those who did not, across various metrics including practical assignments, midterm exams, and overall course success |
| 12 Aug 2024 | https://dl.acm.org/doi/abs/10.1145/3597503.3608128 | [A large-scale survey on the usability of ai programming assistants: Successes and challenges](https://dl.acm.org/doi/abs/10.1145/3597503.3608128)  My comments:  The research has also shown some successful use cases, including quality assurance, learning and documentation. Paticipants reported using AI programming assistants for quility assurance such as generating useful log message and producing test case quickly, and they use these tools to consider edge cases. The second major finding was that participants can also utilized these tools when learning new libraries and new programming languages. The paticipants said it is especially useful when a project used complex programming language, since the codebase from AI is a polyglot project with java, golang and cpp implementations. All kinds of phenomena are explaining to us that AI is freeing up some work that should be performed by programmers. |
| ~~14 Aug 2024~~ | ~~https://www.theteenmagazine.com/has-artificial-intelligence-made-jobs-of-programmers-and-developers-redundant#:~:text=According%20to%20Upwork%2C%20many%20creative,make%20any%20programming%20job%20redundant.~~ | ~~Types of programming jobs that will become redundant~~ ~~My comments:~~  ~~There are many types of programmers, such as testers, front-end engineers, and back-end engineers, but artificial intelligence poses the biggest threat to QA and beta testers because it enables programmers to test their applications more accurately and quickly.New types of programming jobs which will arise from the implementation of Artificial Intelligence.~~  ~~The demand for front-end web developers has already decreased due to the use of no-code website user-interface generators like Wix. Contrarily, the demand for graphic designers to create new web interfaces has increased. The demand for debuggers is also steadily declining due to more efficient Artificial Intelligence algorithms. Any repetitive programming job that lacks creativity is already being or will be replaced.~~ |
| 13 Aug 2024 | https://www.proquest.com/docview/2785489253?accountid=8018&pq-origsite=primo&sourcetype=Magazines | Can AI Tools Like ChatGPT Replace Computer Programmers? My comments:  Copilot still will produce erroneous code, just like ChatGPT produces incorrect statements, so humans must still be in the loop. These models don't really reason at a deep level and there isn't a clear path to getting them there. It is for that reason that Brandon think programmers will be employed for a long time, but the efficiency will improve dramatically. |
| 14 Aug 2024 | https://arxiv.org/abs/2306.05153 | Is AI the better programming partner? Human-Human Pair Programming vs. Human-AI pAIr Programming  My comments:  ChatGPT is a a suitable candidate for exploring the potential of chat-bots replacing human programmers. |
| 15 Aug 2024 | https://www.sciencedirect.com/science/article/pii/S2666827024000021 | Programming with ChatGPT: How far can we go?  My comments:  The evaluation shows that ChatGPT performs well with easy and medium tasks, however when the exercises are at the hard level (classified by LeetCode), then it encounters some difficulties in fulfilling the tasks, and thus it does not pass the tests. This implies that ChatGPT has some limitations with respect to hard tasks. Such limitations happen possibly due to the training, i.e., ChatGPT might not have been well trained with this type of task. |
| 15 Aug 2024 | https://www.diva-portal.org/smash/get/diva2:1779321/FULLTEXT01.pdf | ChatGPT as a Supporting Tool for System Developers  My comments:  An online behavioral task in HTML, CSS, and JavaScript code was developed using ChatGPT by [84], where the authors affirm that AI cannot completely replace programmers |
| 15 Aug 2024 | https://cir.nii.ac.jp/crid/1360299456221050496 | Use Chat GPT to Solve Programming Bugs  My comments:  ChatGPT can contribute toward resolving programming bugs by facilitating debugging assistance, bug prediction, and bug explanation. |
| 16 Aug 2024 | https://www.mdpi.com/2071-1050/16/3/1245 | ChatGPT: Challenges and Benefits in Software Programming for Higher Education  by Carlos Alexandre Gouvea da Silva 1,\*ORCID,Felipe Negrelle Ramos 2ORCID,Rafael Veiga de Moraes 2 andEdson Leonardo dos Santos 3ORCID  My comments:  As technology advances, students have become increasingly dependent on it for their educational needs. From online research to virtual classrooms, technology has transformed the way how students learn. However, this dependence can also lead to a lack of critical thinking skills and the ability to learn independently |
| 16 Aug 2024 | https://cir.nii.ac.jp/crid/1360299456221050496 | Use Chat GPT to solve programming bugs.  My comments:  Surameery and Shakor [[80](https://www.mdpi.com/2071-1050/16/3/1245" \l "B80-sustainability-16-01245" \o ")] suggest that ChatGPT can contribute toward resolving programming bugs by facilitating debugging assistance, bug prediction, and bug explanation. Due to its proficiency in comprehending and scrutinizing code snippets, coupled with its aptitude for knowledge representation and natural language generation, it is highly proficient in executing these functions.  Jalil et al. suggest there is a potential promise or danger that ChatGPT might pose to traditional forms of instruction, especially to solve exams for software testing education |
| 17 Aug 2024 | https://arxiv.org/abs/2304.10778 | Evaluating the Code Quality of AI-Assisted Code Generation Tools: An Empirical Study on GitHub Copilot, Amazon CodeWhisperer, and ChatGPT  [Yetiştiren, Burak](https://www.proquest.com/indexinglinkhandler/sng/author/Yeti$x015ftiren,+Burak/$N/$N?accountid=8018" \o "Yetiştiren, Burak); [Özsoy, Işık](https://www.proquest.com/indexinglinkhandler/sng/author/$d6zsoy,+I$x015f$x0131k/$N/$N?accountid=8018" \o "Özsoy, Işık); [Ayerdem, Miray](https://www.proquest.com/indexinglinkhandler/sng/author/Ayerdem,+Miray/$N/$N?accountid=8018" \o "Ayerdem, Miray); [Tüzün, Eray](https://www.proquest.com/indexinglinkhandler/sng/author/T$fcz$fcn,+Eray/$N/$N?accountid=8018" \o "Tüzün, Eray) |