

AI coding research

| | tabnine | GitHub Copilot | replit | Amazon CodeWhisperer | codeium | sourcegraph | CodeComplete | fauxpilot | Tabby | CODEGEN | refact | mutable.ai | Polycode | CodeT5 | AlphaCode | Magic |
|---------------------------------------|--|--|--|---|--|---|---|--|--|--|--|--|---|---|--|-------------------------|
| Year launched | 2018 | 2021 | 2022 | 2022 | 2022 | 2023 | 2023 | 2023 | 2023 | 2022 | 2022 | 2022 | 2022 | 2023 | 2023 | 2022 - not yet launched |
| Trained on | Open source code with permissive licenses. | Publicly available code (regardless of license) | Publicly available code (regardless of license) | Amazon and open-source code. Reports on producing non-permissively license code | Own model. Trained on permissive licenses. | Users can select: OpenAI or Anthropic currently. Future plans for other models. | Open source code with permissive licenses | Salesforce CodeGen: open source but includes code with non-permissive license | Unclear | Trained sequentially on The Pile, BigQuery, and BigPython. | Unclear | Unclear - based on OpenAI Codex | GPT-2 based architecture, trained on 249GB of code across | CodeT5 model was pretrained on CodeSearch. | Pre-trained on 700GB of GitHub open-source code | Unclear |
| Self hosting option | Yes (enterprise plan) | No | No | No But professional version collects no data. | Yes (enterprise plan) | Yes for Sourcegraph. Cody: not yet. | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | No | n/a |
| Fine tuned to company codebase | Yes (enterprise plan) | No | No | No | Yes | No, focus on context fetching | Yes | No | Yes | Yes, but manually, no OTS solution | Not yet, working on it | Yes | Yes | Yes | No | Yes |
| Status | Production | Production | Production | General availability | Production | Experimental | Private beta | Production | Alpha | Available | Beta | Beta | Available | Available | Available | Waitlist |
| Open source | No | No | No | No | Some plugins | Yes | No | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | n/a |
| Pricing | Free + Paid | Paid | Paid | Free + Paid | Free + Paid | Free + Paid | n/a | Free | Free | Free | Free + Paid | Free + Paid | Free | Free | Free | Free + Paid |
| Best for | + Working faster + Library functions + Fixing syntax errors + Boosting productivity | + Boilerplate code + Writing simple functions/ classes + Fixing syntax errors + Boosting productivity | + Code completion + Code transformation + Code explanation | + Development on Amazon platforms + Boosting productivity | + Code generation/ completion + Code explanation + Supports large number of IDEs and programming languages | + Code generation + Code testing + Code debugging + Onboarding to a new codebase | + Unclear yet | + Developers who want to use open-source alternative to Copilot + Developers who want to self-host their AI coding tool | + Self-contained, with no need for a DBMS/cloud service + OpenAPI interface + Easy to integrate with existing infrastructure | + Code completion | + Code completion + Code transformation | + Domain-specific transforms that understand code + Real-time pairing and the ability to share coding sessions. | + Open-source and free + Offline use to preserve privacy | + Code generation + Code translation + Code refinement + Code defect detection + Code clone detection | + Code completion and correction + High quality code output | + To be discovered |
| Ease of use | Easy | Easy | Medium | n/a | Easy | Easy | n/a | n/a | Easy | Medium | Easy | Medium | Medium | Medium | Medium | n/a |
| Workflow integration | High | High | Medium | n/a | Medium | Medium | n/a | n/a | Initial set up required | Low | Medium | Unclear | Medium | Medium | Low | Medium |
| Impact | High - claim +15% productivity boost | High - claim +55% productivity boost | Medium - No public data | Medium - claim +57% productivity | Medium - claims 5.16 hrs saved in a month for 1 FTE | Medium - good case studies on website | n/a | n/a | Low currently - needs customisation | Low | Medium | Potentially High | Medium | Potentially High | Potentially High | n/a |

Key: ■ Good, ■ Average, ■ Poor