

# References for SSE Ticket to Ride Expansion Pack

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## References for the AI Cards

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For easy comparison between the different studies, the tables below contain a complete overview of the results from all papers analyzed. The percentages indicate how the design pattern solutions perform relative to their non-pattern alternative, for each study. This allows for .

Paper	Focus	Design Pattern						
		Abstract Factory	Adapter	Bridge	Builder	Chain	Command	Composite
Alders 2016 / Feitosa 2017	Java							
Bunse 2013	Java (mobile systems)	+15.9%						
Litke 2007	C++ (embedded systems)		+0.1-0.3%					
Maleki 2019	OOP							
Nouredine 2010*	C++, Java	+4.5%	-0.5%	+4%		-2%	+2%	-1.5%
Qasim 2021	Mobile systems (Android)	-65-61%						
Sahin 2012	C++	+21.6%		-0.2%	+1.2%		-1.8%	+5.1%

Paper	Focus	Design Pattern						
		Decorator	Facade	Factory Method	Flyweight	Interpreter	Iterator	Mediator
Alders 2016 / Feitosa 2017	Java							
Bunse 2013	Java (mobile systems)	+133.6%	+2.5%					
Litke 2007	C++ (embedded systems)			+0.1-0.3%				
Maleki 2019	OOP	+496.6%	-4.3%		-49.7%			
Nouredine 2010*	C++, Java	+12.24%			+3%	-2.5%	-33%	+7%
Qasim 2021	Mobile systems (Android)		-61-22%					+26.61%
Sahin 2012	C++	+712.9%		-0.1%	-58.1%			-9.6%

Paper	Focus	Design Pattern						
		Observer	Prototype	Proxy	Singleton	State/Strategy	Template Method	Visitor
Alders 2016 / Feitosa 2017	Java					+115.9-124.8%	+21.1-32.2%	
Bunse 2013	Java (mobile systems)	+0.1%	+33.2%				+0.1%	
Litke 2007	C++ (embedded systems)	+43.6-44.5%						
Maleki 2019	OOP		+0.6%				+0.8%	
Nouredine 2010*	C++, Java	+30.63%		0%	+1.5%	-3.5%		+9%
Qasim 2021	Mobile systems (Android)	-91-89.3%			+10%, +105%	+3%/-3.5%	-41%, +89%	+3.5%
Sahin 2012	C++	+62.2%	-0.9%	-36.5%	+0.4%	-0.2%		-7.5%

\* This source contains a visual graph rather than exact numbers for most design patterns; the numbers are therefore estimates.

## References for the Mobile Cards

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