

Student Name:	Przemyslaw Tomczyk	Student Number:	C00218004
Working Title:	Implementation/Comparison of relatively new Rectangle Expansion A* (REA*) pathfinding algorithm and impact on multithreaded performance.		
Description:	<p>Implementation and comparison of speed, efficiency and memory/cpu cost of different algorithms. This comparison will feature “online” and “offline” algorithms.</p> <p>This means some algorithms may require to pre-process the map.</p> <p>The second area of my project will be comparison of multithreaded performance of these algorithms with several NPCs.</p>		
Reasons for selecting project:	<p>I’m very interested in using an advanced pathing algorithm as I really enjoyed the A* project in 3rd year and would like to use a relatively new one that is much better than A* that is regarded as the gold standard.</p> <p>I would also like to do this project as I never got a chance to develop more advanced AI for the 3rd year project due to deadlines and very efficient, fast and reliable pathing is one of the biggest parts of an AI so that it will challenge the player.</p>		
Proposed research content:	<ul style="list-style-type: none"> - Investigation into Rectangle Expansion A* - Performance, efficiency and speed of REA* vs optimised A* 		
External links (if applicable):	https://www.sciencedirect.com/science/article/pii/S1000936116301182		
Hardware requirements:	Working PC		
Software requirements:	Visual Studio and SFML		

Other requirements:	Access to large grid maps
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Signed:

Date:

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Approved/Not Approved:		
Reasons for not approving project:		
Conditions attached to approving project:		
Approved/Not Approved:		
Name of Supervisor:		
Signed: _____	Date: _____	