

Project Design Phase

Problem – Solution Fit Template

Date: 15 February 2025

Team ID: LTVIP2026TMIDS91486

Project Name: HematoVision – Intelligent Blood Cell Classification System

Maximum Marks: 2 Marks

Problem – Solution Fit

Problem–Solution Fit means validating that the identified problem is real, relevant, and that the proposed solution effectively addresses it.

Problem–Solution Fit Canvas			
HematoVision Intelligent Blood Cell Classification System			
<div><div>1</div><div>CUSTOMER SEGMENTS</div><div>CS</div></div> <div>Who are our users?</div> <div><ul style="list-style-type: none">• Researchers• Laboratory Technicians• Medical Imaging Analysts• Academic / Educational Users</div>	<div><div>2</div><div>CUSTOMER CONSTRAINTS</div><div>CC</div></div> <div>What constraints prevent users from taking action...</div> <div><ul style="list-style-type: none">• Dependency on skilled experts• Limited analysis speed• Prone to human error</div>	<div><div>3</div><div>AVAILABLE SOLUTIONS</div><div>AS</div></div> <div>What solutions are available to the users right now? Pros & cons?</div> <div><ul style="list-style-type: none">• Manual Microscopic Analysis• Classical Image Processing• Limited by handcraft engineering features</div>	
<div><div>4</div><div>JOBS-TO-BE-DONE / PROBLEMS</div><div>J&P</div></div> <div>Which jobs/problems do we address for users?</div> <div><ul style="list-style-type: none">• Need for fast, accurate blood cell classification• Reduce errors in cell type identification• Automate repetitive analysis tasks</div>	<div><div>5</div><div>PROBLEM ROOT CAUSE</div><div>RC</div></div> <div>What is the root cause of the identified problem?</div> <div><ul style="list-style-type: none">• Microscopic method requires expertise• High human dependency• Scaling manual processes is difficult</div>	<div><div>6</div><div>BEHAVIOR</div><div>BE</div></div> <div>What does the user do to address the problem and get the job done?</div> <div><ul style="list-style-type: none">• Relying on manual microscopic analysis• Spending considerable time per specimen• Seeking expert consultations</div>	
<div><div>7</div><div>TRIGGERS</div><div>TR</div></div> <div>What triggers compel users to act?</div> <div><ul style="list-style-type: none">• Workload of blood smear analysis• Models generate false results• Input images are clear</div>	<div><div>PROPOSED SOLUTION</div><div>HematoVision - AI-Powered Blood Cell Classification System</div><div><ul style="list-style-type: none">✓ HematoVision uses:<ul style="list-style-type: none">✓ Transfer Learning (Pretrained CNN)✓ Automated Feature Extraction✓ Deep Learning-Based Classification</div><div><div>VALUE PROPOSITION</div><div><div>ASSUMPTIONS</div><div><ul style="list-style-type: none">✓ Dataset quality is sufficient✓ Models generate false results✓ Input images are clear</div><div><div>RISKS</div><div><ul style="list-style-type: none">✗ Dataset bias / imbalance✗ Performance variation on core three HematoVis</div></div></div></div></div>		<div><div>9</div><div>YOUR SOLUTION</div><div>SL</div></div> <div>What's your solution to the identified problem?</div> <div><ul style="list-style-type: none">• Research articles & medical journals• Scientific conferences• Academic institutions</div>
<div><div>8</div><div>TRIGGERS</div><div>TR</div></div> <div>What triggers compel users to resolve?</div> <div><ul style="list-style-type: none">• Workload of blood smear analysis• Models generate false results• Input images are clear</div>	<div><div>10</div><div>SUCCESS INDICATORS</div><div>EM</div></div> <div>HematoVision fits the problem space because:</div> <div><ul style="list-style-type: none">✓ High classification accuracy✓ Fast prediction speed✓ Consistent, reliable output✓ Positive user feedback</div>		
VALUE PROPOSITION		SUCCESS INDICATORS	