**Ideation Phase**

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| Date | 30 june2025 |
| Team ID | LTVIP2025TMID59822 |
| Project Name | Hematovision: Advanced Blood Cell Classification Using Transfer Learning |
| Maximum Marks | 4 Marks |

The Ideation Phase is the foundation of the Hematovision project, where we explored the problem space, understood user needs, and identified opportunities for innovation through technology. Our goal was to create a solution that addresses real-world challenges in hematology using artificial intelligence.

**2.1 Empathize & Discover**

**Understanding the Problem**

Blood cell classification is a vital part of diagnosing blood-related diseases such as leukemia, infections, and anemia. Traditionally, this is done manually by trained professionals using a microscope. However, this process is:

* Time-consuming
* Prone to human error
* Highly dependent on the skill level of the professional

Hematovision was envisioned to solve these problems using deep learning and transfer learning, enabling automated, accurate classification of blood cell images.

**Target Users**

* Pathologists
* Lab Technicians
* Biomedical Researchers
* Medical Students
* Diagnostic Centers and Hospitals

**Pain Points Identified**

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| **User** | **Pain Point** |
| Pathologists | Manual analysis is slow and repetitive |
| Lab Technicians | Risk of misclassification due to fatigue or inexperience |
| Hospitals | Lack of scalable, affordable diagnostic tools |
| Patients | Delays in diagnosis can lead to delayed treatment |

**Key Needs**

* Fast and accurate classification of blood cells
* User-friendly interface for non-technical users
* Reduced workload and diagnostic delays
* Cost-effective and easy to integrate into existing workflows

**2.2 Define the Opportunity**

Based on user insights, we defined our opportunity as:

“How might we design an intelligent, accessible, and accurate system that helps healthcare professionals automate the process of blood cell classification using deep learning techniques?”

This led to the formation of Hematovision — a powerful yet easy-to-use tool for blood cell classification using transfer learning, making AI-based diagnostics available even with limited data and modest computational resources.