To create an assurance case for the DeepMind system from the assurance case pattern provided, we need to replace placeholders and instantiate the elements as per the domain information. Here is the instantiated version displayed in a hierarchical tree format:

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G1: Interpretability Claim. The DeepMind ML Model is sufficiently interpretable in the clinical pathway for retinal diagnosis

C1: DeepMind ML Model is used for diagnosing retinal disease based on eye scans

C2: Interpretability in a medical context enhances trust and utility among clinicians

C3: Context includes setting, time, and audience specific to clinical diagnosis

S1: Argument based on the essential aspects of interpretability

C4: Essential aspects of interpretability include transparency and clarity in communication

G2: Right Method. The segmentation map interpretability method is implemented, i.e., the tissue structure is faithfully being explained

S2: Argument over interpretability methods

G8: Segmentation map is the right type of interpretability method e.g., local

G9: Segmentation map is suitably faithful to the ML model process

C5: Interpretability methods focus on medical imaging interpretations

G3: Right Context. Interpretations produced in the clinical healthcare setting

C6: Format of interpretations intended for medical professionals

G5: Right Time. Interpretations produced at the time of clinical decision-making

G6: Right Setting. Interpretations are available within clinical software systems

G7: Right Audience. Interpretations produced for retinal clinicians

G4: Right Format. Interpretability methods are presented in a familiar medical format for retinal clinicians

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### Explanation:

1. \*\*Top-Level Goal (G1)\*\*: The main claim is that the "DeepMind ML Model is sufficiently interpretable in the clinical pathway for retinal diagnosis," which is crucial for its integration into clinical processes.

2. \*\*Contexts (C1, C2, C3)\*\*: These provide information about the system, its interpretability importance, and specific details about the medical setting—all of which frame the primary goal.

3. \*\*Strategy (S1)\*\*: Arguments are based on essential aspects of interpretability, which is supported by a context (C4) detailing these aspects.

4. \*\*Sub-Goals (G2, G3, G4)\*\*:

- \*\*(G2)\*\* Discusses the implementation of the right interpretability method (segmentation map), linked to further debate over the specific interpretability methods via \*\*(S2)\*\*.

- \*\*(G3)\*\* Ensures that interpretations are made in the correct context, setting, time, and for the right audience, specified by sub-goals \*\*(G5, G6, G7)\*\* and context \*\*(C6)\*\*.

5. \*\*Undeveloped Sub-Goals (G4, G5, G6, G7, G8, G9)\*\*: Each of these goals, although introduced, are marked as undeveloped and must be further detailed in the assurance case development process. They include necessary information about the contexts in which interpretability methods should be applied, ensuring the use-case scenarios and the client, which are retinal clinicians.

This pattern converts placeholders and instantiates the GSN elements according to the specific information available for the DeepMind system, providing a structured argument that the implementation meets the necessary interpretability requirements within its application domain.