Here is the generated checklist in markdown format:

AI Explainability and Model Development Checklist

European Union Aviation Safety Agency (EASA) Requirements

DM-07: Data Validation and Verification

- Is data validation and verification performed throughout the data management process?
- Are data management requirements addressed, including DQRs?

DM-08: Data Verification for ML Training

- Is a data verification step performed to confirm the appropriateness of defined ODD and data sets used for training, validation, and verification of the ML model?
- Are the results of data verification documented?

LM-01: ML Model Architecture Description

- Is the ML model architecture described in detail?
- Are the key components of the model (e.g., layers, activation functions) identified and explained?

LM-02: Learning Management and Training Processes

- Are requirements for learning management and training processes captured, including:

  - ○ Model family and selection
  - ○ Learning algorithm(s) selection
  - ○ Explainability capabilities of the selected model
  - ○ Activation functions
  - ○ Cost/loss function selection and link to performance metrics
  - ○ Model bias and variance metrics and acceptable levels
  - ○ Model robustness and stability metrics and acceptable levels
  - ○ Training environment (hardware and software) identification
  - ○ Model parameters initialisation strategy
  - ○ Hyper-parameters identification and setting
  - ○ Expected performance with training, validation, and test sets?

- Are the results of capturing these requirements documented?

LM-03: Credit from Training Environment

- Is credit sought from the training environment and qualified accordingly?
- Are the results of qualifying the environment documented?

LM-04: Quantifiable Generalisation Bounds

- Are quantifiable generalisation bounds provided for the ML model?
- Are the bounds documented and justified?

LM-05: Model Training Result Documentation

- Is the result of the model training documented in detail?
- Are the key metrics (e.g., accuracy, loss) and performance indicators reported?

LM-06: Model Optimisation Documentation

- Is any model optimisation that may affect the model behaviour documented and justified?
- Are the results of assessing the impact on the model behaviour or performance documented?

LM-07-SL: Bias-Variance Trade-off Evidence

- Is evidence provided for the bias-variance trade-off in the model family selection?
- Is the reproducibility of the model training process documented?

LM-08: Estimated Model Bias and Variance

- Are the estimated bias and variance of the selected ML model reported?
- Do they meet the associated learning process management requirements?

LM-09: Model Verification and Evaluation

- Is an evaluation of the performance of the trained ML model performed using test data set?
- Are the results of the model verification documented?

LM-10: Requirements-Based Model Verification

- Is a requirements-based verification of the trained ML model behaviour performed?
- Are the results of the verification documented?

LM-11: Learning Algorithm Stability Analysis

- Is an analysis on the stability of the learning algorithms performed and documented?
- Are the results of the analysis reported?

LM-12: Trained Model Stability Verification

- Is a verification of the stability of the trained ML model performed, covering the whole AI/ML constituent ODD?
- Are the results of the verification documented?