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POWER OF ATTORNEY

The undersigned, as a Section 16 reporting person of Ambarella, Inc. (the "Company"), hereby constitutes and appoints Feng-Ming Wang and Michael Morehead, the undersigned's true and lawful attorneys-in-fact to:

1. prepare, execute in the undersigned's name and on the undersigned's behalf, and submit to the Securities and Exchange Commission (the "SEC") a Form ID, including amendments thereto, and any other documents necessary or appropriate to obtain EDGAR codes and passwords enabling the undersigned to make electronic filings with the SEC of reports required by Section 16(a) of the Securities Exchange Act of 1934 or any rule or regulation of the SEC;

2. complete and execute Forms 3, 4 and 5 and other forms and all amendments thereto as such attorneys-in-fact shall in their discretion determine to be required or advisable pursuant to Section 16 of the Securities Exchange Act of 1934 (as amended) and the rules and regulations promulgated thereunder, or any successor laws and regulations, as a consequence of the undersigned's ownership, acquisition or disposition of securities of the Company; and

3. do all acts necessary in order to file such forms with the Securities and Exchange Commission, any securities exchange or national association, the Company and such other person or agency as the attorneys-in-fact shall deem appropriate.

The undersigned hereby ratifies and confirms all that said attorneys-in-fact and agent shall do or cause to be done by virtue hereof. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, is not assuming, nor is the Company assuming, any of the undersigned's responsibilities to comply with Section 16 of the Securities Exchange Act of 1934 (as amended).

This Power of Attorney shall remain in full force and effect until the undersigned is no longer required to file Forms 3, 4 and 5 with respect to the undersigned's holdings of and transactions in securities issued by the Company, unless earlier revoked by the undersigned in a signed writing delivered to the Company and the foregoing attorneys-in-fact.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 19th day of January, 2024.

Signature: /s/ John A. Young

Print Name: John A. Young