Sarah Maria Sun became internationally renowned as an interpreter of contemporary music. Today, her repertoire comprises over 2,000 works spanning from the 16th to the 21st century. Over the course of her career, she has participated in more than four hundred world premières. In recent years, she has increasingly performed monodramas portraying complex female characters. For her interpretations of the dual role Elsa/Lohengrin (in Lohengrin by Salvatore Sciarrino, Salzburg Easter Festival) and Gwen (in Psychose 4.48 by Philip Venables, Semper Zwei Dresden), she was nominated as Singer of the Year.

As a soloist, she performs at concert halls and festivals such as Suntory Hall Tokyo, Muziekgebouw Amsterdam, Elbphilharmonie Hamburg, Tonhalle Zürich, Auditorio Nacional Madrid, the Philharmonies of Berlin and Cologne, the Biennales of Paris, Venice and Munich, the Arnold Schönberg Centre Vienna, and at festivals in Lucerne, Salzburg, Witten, Donaueschingen, Herrenhausen, Cervantino and the Vertice Festival in Mexico, among many others. She has appeared at the opera houses of Zurich, Berlin, Basel, Dresden, Frankfurt, Munich, Düsseldorf, Stuttgart, Mannheim, Leipzig, Strasbourg, Luxembourg, Zagreb, and at the Opéra Bastille and Opéra Comique in Paris.

Sarah Maria Sun has performed under the baton of conductors such as François-Xavier Roth, Sir Simon Rattle, Ingo Metzmacher, Sylvain Cambreling, Kent Nagano, Alan Gilbert, Thomas Hengelbrock, Susanna Mälkki, Peter Rundel and Heinz Holliger, and with orchestras including the Leipzig Gewandhaus Orchestra, the Berlin Philharmonic, the symphony orchestras of NDR, BR, SWR and WDR, the Dresden Philharmonic, the Antwerp and Tokyo Symphony Orchestras, as well as with Klangforum Wien, Ensemble Musikfabrik Cologne, Ensemble Modern, Mosaik, Intercontemporain, and string quartets such as the Kuss Quartet, Quatuor Diotima, Arditti Quartet, Schumann Quartet, Signum Quartet and many other ensembles. From 2007 to 2014, she was the first soprano of the Neue Vocalsolisten Stuttgart, a chamber ensemble of seven singers that has for decades been among the world's leading pioneers of contemporary music.

Since 2013, she regularly works in a song duo with pianist Jan Philip Schulze. Together with clarinettist Kilian Herold, they founded the trio Silence is Golden.

Her discography comprises more than 40 CDs, many of which have received awards or nominations. She regularly gives masterclasses in 20th- and 21st-century vocal music at universities and conservatoires including those in Oslo, Harvard, Chicago, Mozarteum Salzburg, Munich, Stockholm, Zurich, Lucerne, Rostock, Moscow, Dresden, Hanover and Berlin. From 2018 to 2022, she served as guest professor, tutor and lecturer at the conservatoires of Hanover, Graz and Lucerne. Since 2022, she has held the position of Professor for Creative Interpretation of New Music at the Basel Academy of Music.