

PCOS Disease Detection using Deep Learning

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Abstract: The most common endocrinological condition and a major contributor to anovulatory infertility in women worldwide is polycystic ovarian syndrome (PCOS). One of the most reliable methods for diagnosing PCOS and developing an effective treatment plan for patients with this illness is the detection of numerous cysts using ovarian ultrasonography (USG) scans. An intelligent computer-aided cyst detection system may be an effective alternative to relying on labor-intensive manual identification. The Convolutional Neural Network (CNN) incorporating various state-of-the-art techniques and transfer learning has been employed for feature extraction from the images. High amounts of androgens in women result in a combination of symptoms known as polycystic ovarian syndrome (PCOS). A combination of genetic and environmental factors that are common illnesses are the root cause of PCOS. It is frequently accompanied with clinical symptoms such as atherosclerosis, hirsutism, acne, and hyperandrogenism as well as persistent infertility. According to recent studies, this illness affects roughly 18% of Indian women. The damaged ovary was identified by doctors manually reviewing ultrasound images, but they were unable to determine if it was a simple cyst, PCOS, or malignant cyst. For the purpose of classifying cysts that are filled with blood or fluid on the basis of ultrasound pictures, CNN-based methods are proposed in this study and Python programming code is produced. The work uses feature extraction from images processed using CNN.

Keywords: Convolutional Neural Networks, Deep Learning, Polycystic Ovary Syndrome, Ultrasound Images, Machine Learning.

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