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Cognitive Computation in Physiology and Medicine
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DEVELOPING DECISION SUPPORT SYSTEM FOR OTITIS MEDIA DIAGNOSIS

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Abstract. Otitis media (OM) is an inflammation or infection of the middle ear. Timely diagnosis of OM is crucial to prevent potential complications such as hearing loss, speech and language delays. In recent years, the role of decision support tools in diagnosing OM cannot be overstated, offering clinicians invaluable assistance in swiftly and accurately identifying the condition, thus enabling timely interventions and improving patient outcomes. The aim of this seminar to develop a decision support tool for OM diagnosis that intends to improve clinical decision-making, thereby increasing diagnostic accuracy, reducing unnecessary interventions and ultimately optimizing patient care. In this context, an open access tympanic membrane dataset is used in the experiments. A convolutional neural network is trained using Tensorflow. In order to deploy the model and provide agnostic communication, the Flask library is used to obtain an application programming interface. Finally, a user interface is designed using the React framework for enhanced user interaction.

Short Bio. Zafer CÖMERT is currently Assoc. Prof. in the Department of Software Engineering at Samsun University. He received his BSc and MSc degrees in Electronics and Computer Education from Firat University in 2008 and 2012, respectively. He has finished Ph.D. work on the classification of cardiotocography data with machine learning techniques in the Department of Computer Engineering at Inönü University in 2017. He teaches of the courses of computer science, manages artificial intelligence lab and promotes the development of software products in order to foster innovation, practical application of theoretical concepts, and the advancement of cutting-edge technologies in the field. He interests biomedical signal and image processing, artificial intelligence, machine learning, deep learning and decision support systems.

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