# CAPSTONE PROJECT ABSTRACT: WI-FI INNOVATION

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**Project Title:** Wi-Fi: How It Changed Our World

## 1. English Abstract

This presentation explores the transformative journey of Wi-Fi technology, tracing its evolution from early wireless experiments to the high-speed connectivity of Wi-Fi 6 and 7. It highlights the critical role of IEEE 802.11 standards and the Wi-Fi Alliance in establishing global interoperability. Furthermore, the presentation introduces a technical innovation: the "Router Admin Access" project. This is a network monitoring tool designed to identify connected devices, diagnose network health, and enhance security protocols to prevent unauthorized access. The presentation concludes by discussing the future of wireless technology in the context of Cloud Engineering and its potential to address societal challenges through enhanced connectivity.

## 2. Mukhtasari wa Kiswahili

Wasilisho hili linachunguza safari ya mabadiliko ya teknolojia ya Wi-Fi, likifuatilia mageuzi yake kutoka kwa majaribio ya mapema ya pasiwaya hadi muunganisho wa kasi wa Wi-Fi 6 na 7. Linosisitiza jukumu muhimu la viwango vya IEEE 802.11 na Wi-Fi Alliance katika kuanzisha ushirikiano wa kimataifa. Zaidi ya hayo, wasilisho linatambulisha uvumbuzi wa kiufundi: mradi wa "Router Admin Access." Hiki ni chombo cha kufuatilia mtandao kilichoundwa kutambua vifaa vilivyounganishwa, kuchunguza hali ya mtandao, na kuimarisha itifaki za usalama ili kuzuia ufikiaji usioidhinishwa. Wasilisho linatamatisha kwa kujadili mustakabali wa teknolojia ya pasiwaya katika muktadha wa Uhandisi wa Wingu (Cloud Engineering) na uwezo wake wa kutatua changamoto za kijamii kupitia muunganisho ulioimarishwa.

## 3. Ikumbithia ria Kimeru (Kimeru)

Wonyo uju uricuaga rugendo rwa utindui bwa teknoloji ya Wi-Fi, kumanjia mirio ya mbere ya thimu itina migwa mwanka mbaru ya rui-i rwa Wi-Fi 6 na 7. Nuritithagia gaturwa ka njira cia IEEE 802.11 na ngwataniro ya Wi-Fi Alliance nwa untu bwa kuthondeka njira iria into bionthe bionanagira nthiguru yonthe. Kagi kairi, wonyo uju niwonanagia mradi jwa "Router Admin Access"—ngugi ya kuthuthuria mtandao iria juthondeketwe kumenya into biria bikuita kiri router, kuthuthuria mwinjeru bwa mtandao, na kuraithia muthenya jwa mtandao nwa untu bwa kurigiria antu baria batiikirue kwingira. Wonyo uju urathiria na kwaria untu bwa rui-i rwa teknoloji ya mbere kiri wonjinia bwa cloud na uria iumba gutethia kiri mathina ja antu na njira ya kureta muunganisho jwa mbaru.