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ENGIN435 – Antenna Design

Nov 20th, 2020

**Project 5 References List**

[1] Q. Yang, S. J. Pan and V. W. Zheng, "Estimating Location Using Wi-Fi," in IEEE Intelligent Systems, vol. 23, no. 1, pp. 8-13, Jan.-Feb. 2008, doi: 10.1109/MIS.2008.4.

This article tasks a group of participants to predict a client’s location in a 145.5m x 37.5m academic

building using only a set of data which consisted of RSS (received signal strength) values and

locations labels. This article could help us determine the factors that contributed to weak RSS by

location away from a Wi-Fi access point.

[2] Ma, Rui, Guo, Qiang, Hu, Changzhen, and Xue, Jingfeng. "An Improved WiFi Indoor Positioning Algorithm by Weighted Fusion." *Sensors (Basel, Switzerland)* 15.9 (2015): 21824-1843. Web.

This article discussed the traditional fingerprinting algorithm that is used for indoor positioning

used by Wi-Fi devices, an suggests improvements by a method called “Weighted Fusion.”

This article could help us further understand the algorithms that are used to track indoor

positioning of Wi-Fi devices.

[3] Tao Huang, Bin Tang, Baoliu Ye, Zhihao Qu, Sanglu Lu, "Extending WiFi applicability in extremely poor channels."Computer Networks,Volume 179,2020,107361,ISSN 1389-1286, <https://doi.org/10.1016/j.comnet.2020.107361>.

This article touches upon extending the applicability of 802.11 (networking specification for

Wi-Fi) in extremely poor channels. This article could help our group understand what makes

a channel on a Wi-Fi access point extremely poor at transmission and reception of Packets (data).

[4] Anniss, M. (2014). *High-tech science: How does wifi work?,* pp. 4-13, New York, NY: Gareth Stevens Publishing.

This a book reference that touches upon how Wi-Fi works, which will be useful for an

introductory to the premise of our group’s project.

[5] Albano, S. (n.d.). WiFi signal strength: How it works and how it can be improved. Retrieved November 20, 2020, from https://www.minim.co/blog/wifi-signal-strength-how-it-works-and-how-it-can-be-improved

This is a short article that discusses how the Wi-Fi signal works, but also addresses what affects

the signal strength and how to improve it. This article will provide on the insufficient factors that

contribute to poor Wi-Fi reception.

[6] Broadband: What affects your Wi-Fi signal. (n.d.). Retrieved November 20, 2020, from https://support.zen.co.uk/kb/Knowledgebase/Broadband-What-affects-your-WiFi-signal

This is another short article that touches upon why the signal strength of a Wi-Fi access point is

reduced in certain parts of a home or office, as well as how to improve upon the signal reception.

Again, this will aid our understanding in how the architecture and materials of a home or office

structure affect a Wi-Fi signal.

[7] Tutorials. (n.d.). Retrieved November 20, 2020, from <https://wiki.gnuradio.org/index.php/Tutorials>

The last source is a reference tutorial website for the software-define radio application,

GNUradio. Our group would like to be able to simulate and test a Wi-Fi signal and using a tool,

like GNUradio, will require some references from tutorials in order to do so.