

Intern Requirement

No. of students required	1
Preferred Discipline	Electrical Engineering
Prerequisites/ Skills Required	<ul style="list-style-type: none">• C/C++ programming• Knowledge on digital communication system preferred• Good background in statistics/probability• Analytical skills

Project Details

Title	Channel Coding Techniques for Protecting Data Transmission
Overview/Background	<p>During transmission of data, it is common for signals to undergo disruption as it propagates through the environment. In order to ensure that the recipient can successfully recover the data, a few techniques can be deployed and one such way is the implementation of channel coding.</p> <p>This project involves understanding the design principles behind Forward Error Correction techniques and implementing them into software modules with appropriate application interfaces for integration into a larger communication system.</p> <p>Upon completion of this project, the intern will acquire a good knowledge on communication protocols as well as hands-on experience in development using C/C++.</p>
Objectives/Scope/ Deliverables	<ul style="list-style-type: none">• Perform research and development in the area of channel coding and communication protocols.• Involve in the development of Bit-Log-Likelihood Ratio (Bit-LLR) computation and quantization for high order modulation (8PSK and 16QAM) prior to decoding. (With Bit-LLRs, decoders can leverage on these soft-values and/or a quantized representation to correct more bit errors arising from channel impairments given the same signal power).
Project Duration	6 months