Computer Insecurities Project Plan

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**Weeks (1-2): Research and Setup**

* Research P4 programming/LLMs
* Setup Mininet and BMv2 (virtual switch) for testing environment

**Weeks (3-4): LLM-assisted P4 code**

* Develop P4 code with Chatgpt, Gemini, Claude, Deepseek

**Weeks (5-6): Testing in Mininet**

* Implementing cyberattack models (DDoS, MITM, Packet Injection Attacks, TCP/IP Spoofing, ARP Poisoning, Custom Attack Models)
* Deploy LLM generated p4 Policies

**Weeks (7-8): Testing/Analysis**

* Measure attack mitigation success rate
* Analyze network performance impact
* Compare LLM generated P4 code and manually typed code

**Weeks (9-11): Powerpoint creation/Final report**

* Summarize findings in powerpoint
* Prepare presentation and final report

ChatGPT - Alex Nolen

Gemini - Wilson Gomez

Claude - Myles Vinal

Meta - Joseph Lo Bianco

Copilot - Dennis Kerry

1. “What is p4 code?
2. “develop security strategies and p4 code for networking against cyber attack such as DDoS, MITM, Packet Injection Attacks, TCP/IP Spoofing, ARP Poisoning, Custom Attack Models”
3. Prompt to generate p4 based-network strategies