SCEPTRE AI

Students: Joel Lehman, Star Doherty, Tomin Kappiarumalayil
Mentors: Michael Cloud, Bryce Ferguson, Andrew Rodriguez

NREIP
NAVAL RESEARCH ENTERPRISE INTERNSHIP PROGRAM

Objective:
Source code Compliance Evaluator and Parser for Threat Resolution and Elimination (SCEPTRE) is an AI tool used to help streamline the process of code review through utilization of static code scanners and large language models.

Process:
1. Research of modern AI models such as Large Language Models (LLMs)

2. Countless meetings with cybersecurity engineers to revise product scope to meet their needs

3. Development of a pipelined program which takes in code and outputs a checklist with relevant security vulnerabilities

Contributions:
Initially, we worked together to research what AI models we wished to use. After landing on LLMs, we split up to develop the model for our needs, to process data coming into the model and to output the data from our model as a checklist.

What are you most proud of this summer?
At the end of our project, we were able to produce a tangible product which can be integrated within the US NAVY almost seamlessly.

Why was the internship valuable?
We learned so much about how modern AI systems such as ChatGPT work as well as explore a new avenue for utilization of large language models

Advice for future cohorts?
Remember, it's a learning experience so don't get too stressed about your deliverable. It took around three weeks for us to get a good idea on our final product

Results / Accomplishments / Next Steps:
We were able to create a tool to help cyber security engineers assess vulnerabilities within code during the code review process.

Sceptre can save the Navy days to even weeks of man hours to finish this code review process. These funds can be redirected help our fighters in various other ways.

In the future, we want Sceptre to be able to leverage more static scanning software as it currently detects false positives within the selected code. We also would like to create a wider database of insecure code to possibly train our model to detect code without help from additional scanning tools.

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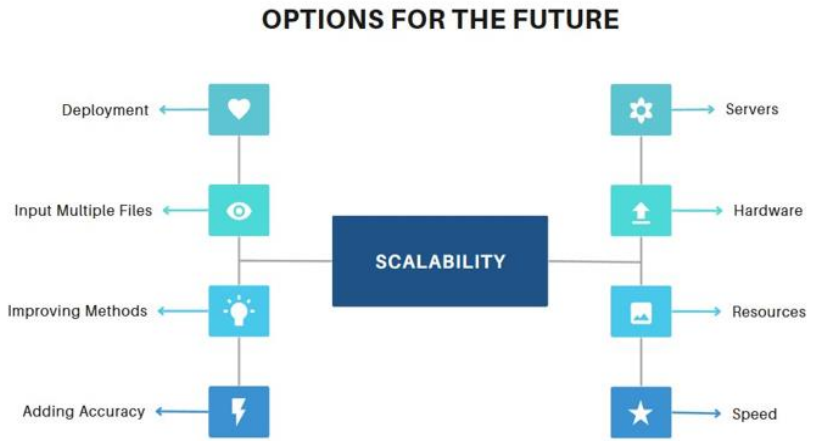

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PIPELINES

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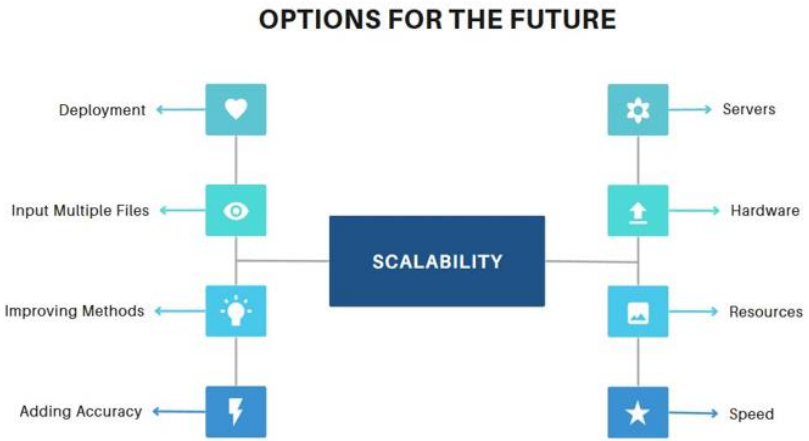

Lab Logo

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